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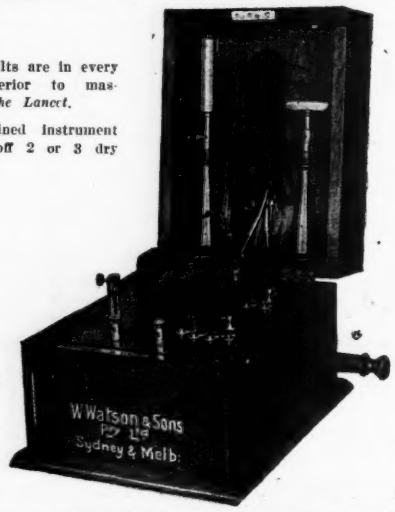

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THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. I.—6TH YEAR. SYDNEY: SATURDAY, MARCH 29, 1919. No. 13.

A USEFUL SUPPORT FOR OPERATIONS ON THE KIDNEY.

By **H. B. Devine, M.S. (Melb.),**

Honorary Surgeon to In-Patients, St. Vincent's Hospital, Melbourne.

Operations on the kidney are very often rendered unnecessarily difficult by the awkward and unstable

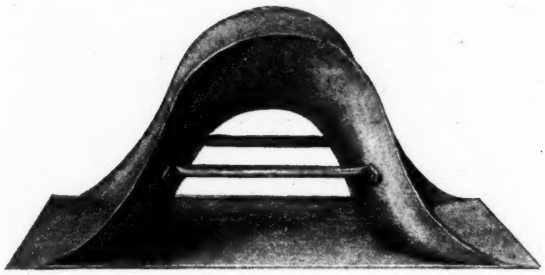

FIGURE I.

position in which the patient is placed. Figure I. illustrates a kidney rest which I have used for the last six years and which has been the greatest comfort to me in very difficult kidney operations. The apparatus is made of copper and fashioned on a mould from the concavity of a medium-sized man in acute lateral flexion.

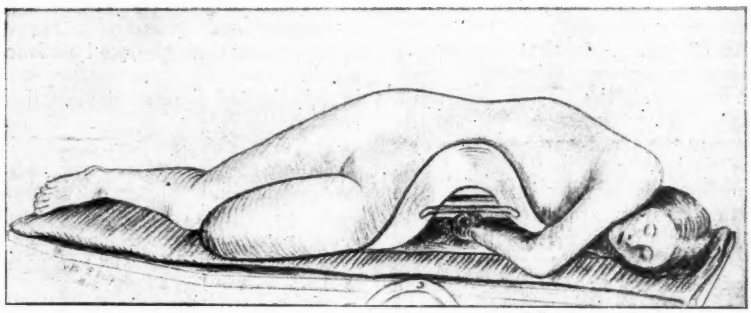

FIGURE II.

Figures II. and III. show the patient in position. The underneath leg is flexed at right angles and the uppermost thrown somewhat dorsalwards; this position, once properly fixed, will need no further adjustment. Because of the acute flexion the kidney is very easily delivered. Elevation of the shoulders, if the table allows the movement, relaxes the muscular strain and facilitates the suture of the wound or the support may easily be removed prior to suture by grasping the farthermost bar and rotating the rest from under the patient.

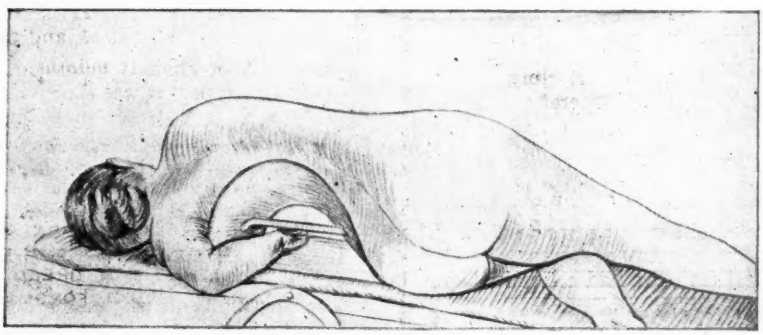

FIGURE III.

I use it also in another way. There is a class of chronic case in which it is impossible to be sure whether the trouble is entirely due to a kidney lesion or where an adequate cause may not be found in exploring the kidney. In these patients, if the thighs and legs be flexed, the peritoneum in the kidney wound can be widely opened and the appendix removed, the gall bladder explored and, if necessary, a limited examination made of the stomach and other organs. Through this incision, the other kidney may be palpated as a preliminary to a nephrectomy.

SOME RECENT ADVANCES IN OUR KNOWLEDGE OF BILHARZIASIS.

By **N. Hamilton Fairley, O.B.E., M.D. (Melb.),**

Major, Australian Army Medical Corps; Pathologist, No. 14 Australian General Hospital; Lecturer in Parasitology, Egyptian University, Cairo.

I.—Historical Account of Recent Work.

Up to the year 1912 the exact conveyance of bilharzia disease from one man to another was still a matter of conjecture. Looss (1), who had worked for many years on the subject, was of the opinion that the life history of bilharzia differed materially from that of the other trematodes in that the *miracidia*, or ciliated embryos, emanating from the ova passed directly through the skin, while Manson (2), arguing on biological analogy, stipulated that an invertebrate intermediary host must exist. Looss (3) also denied the existence of two species of bilharzia worms in Egypt. Manson and Sambon (4), on the contrary, on geographical and morphological grounds, considered that there were two species of bilharzia, the one giving rise to a lateral-spined egg and occurring commonly as an intestinal infection and that the latter worm

occurred in parts of the world (West Africa, South America and the West Indies) where the terminal-spined egg is not found.

As regards *Bilharzia japonica*,[1] the general morphology of the worm and its pathology were at that time understood and its specificity established. For the earliest work on the transmission of *B. japonica*, and in fact bilharzia worms in general, we are indebted to Japanese workers. The earlier efforts of Cobbold (5) in 1870, Sonsino (6) in 1884, Lortet and Vialleton (7) in 1894, to trace the development of Egyptian bilharzia in molluscs and arthropods, as well as numerous attempts to transmit the disease directly to man by the agency of *miracidia*, failed.

In 1908 Fujinama (8) and Nakamura first found domestic animals infected with *B. japonica*. They noted that if non-infected cattle, dogs and cats were immersed in streams popularly reputed to be dangerous, an intense infection resulted. In 1910 they repeated these experiments with animals, such as mice, which are not found naturally infected and found young parasites in the portal vein three days after immersion. In addition, the infection of man by these means was proved by Matsuura (9), who placed his legs in infected water and some time after passed ova in his stools. In 1911, Miyagawa (10) repeated these experiments and described the invasion forms. In 1913 Miyairi and Suzuki (11) indicated that a fresh-water mollusc acted as the intermediary host and early in 1914 Ogata (12) accurately described the bifid-tailed cercariæ (or larva) of the worm. In that year Leiper and Atkinson (13) were on an expedition to Yangtze Valley and Japan to investigate the matter and amplified these observations. They demonstrated the life history of the parasite in the fresh-water mollusc now known as *Katayama nosophora*, a new species; furthermore, they completed the story by infecting mice with the characteristic cercariæ through the skin and later by demonstrating the adult worms of both sexes in the portal system.

Our knowledge of the life history of *Bilharzia japonica* was thus complete at the outbreak of the world war.

Realizing that the high endemic index of bilharziasis in the Nile Valley (61% of fellaheen [Ferguson (14)], with a death-rate [Madden (15)] of 10%) and the consequent danger of infection to a large number of British troops, the War Office decided to despatch a special mission, consisting of Leiper, J. G. Thomson and Cockin to reinvestigate Egyptian bilharziasis.

This mission was a complete success. Within six weeks of commencing work in February, 1915, the non-eyed, bifid-tailed cercariæ (characteristic of the genus) were found in two different genera of snails. During the following year Leiper followed up his observations by completely establishing the existence of two separate species of bilharzia worms in man. The one now known as *Bilharzia hæmatobia*, presented distinctive morphological features, laid a terminal-spined egg and developed in a sinistral and spiralled fresh water snail (*Bullinus sp. contortus* and *dybowski*). The second is now known as *Bilharzia mansoni*. It gives rise to a lateral-spined egg and developes in a flat fresh water snail, *Planorbis boissyi*. In addition to this, he experimentally infected animals, both *viâ* the unbroken skin and *viâ* the alimentary tract.

II.—Life Cycle of the Bilharzia Worms.

The ova are voided either in the urine or fæces, or in both. On coming into contact with water (that is, with a fluid of lower osmotic pressure), the chitinous envelope of the egg becomes distended and ruptures, thus freeing the active, ciliated *miracidium* which it contains. This ciliated embryo swims about rapidly in search of the intermediary host for a period of 24 to 36 hours, to which it is attracted by chemiotactic influence. It then enters the snail by piercing the pulmonary chamber by means of its piercing papilla and makes its way to the digestive gland (or liver), situated in the central whorl.

In this situation the germinal cells of the embryo multiply rapidly and become hollowed out into mother and daughter cysts, which are now known as sporocysts and which radiate throughout the glandular substance. No redial stage, as in other digenetic trematodes, exists. Inside the sporocysts, cercariæ are produced by a process of internal budding. After a period of from four to six weeks, fully developed, active cercariæ are discharged by rupture of the sporocysts and make their way through the body cavity of the intermediate host into the water. In this medium they can remain alive for 36 to 48 hours and in this limited time must meet their definitive host or else perish.

The cercaria[2] itself consists of (*a*) a body with two suckers, anterior and ventral, and a number of secretive cells, called "poison cells; (*b*) a tail with terminal fork. The bilharzia cercariæ belong to the furcocercous group of the *Distome trematodes* and are further distinguished by absence of a muscular pharynx and absence of eye-spots.

There are minor differences which differentiate the cercariæ of the three species of bilharzia. On the whole, those of *B. hæmatobia* are slightly larger (0.472 mm.) than those of *B. mansoni*, while those of *B. japonica* are about half this length. A point by which the cercaria of *B. mansoni* can be distinguished from *B. hæmatobia* is the prominence on lateral view of the ventral sucker in the former (Fairley and Bahr, Report to Australian Government, 1918). Furthermore, in this report it was shown as a result of 10,000 dissections of fresh water snails in Egypt (*Planorbis* and *Bullinus*) that the period of maximum infectivity for both species of parasite occurred, contrary to general expectation, during the winter months (54% of *P. boissyi* and 11% of *Bullinus contortus* dissected near Cairo).

Infected snails may be distinguished on macroscopic examination by the great friability of the shell and by the change in colour it undergoes. On placing such a snail in water, after a few minutes cercariæ can be seen emerging with the naked eye or low-power lens.

[1] Note on the nomenclature. In adopting the generic term *Bilharzia* in preference to *Schistosomum* I have followed Leiper's latest dictum (*Royal Army Medical Corps Journal*, 1918, XXX., No. 3, pp. 235-260). Bilharz discovered the worm in 1851, which he named *Distomum hæmatobium*, but which was renamed *Bilharzia* in honour of its discoverer by Cobbold. In 1858 Weinland had created the genus *Schistosomum* for the worm *Distomum hæmatobium* of Bilharz and von Siebold. One must agree with Leiper that the generic name *Bilharzia*, which conformed to the generally-accepted views on nomenclature of those days, should stand as a perpetuation of the name of its discoverer. The specific name thus becomes feminine, *i.e.*, *B. hæmatobia*.

[2] One must emphasize that there exist other furcocercous cercariæ in the snails besides those which act as intermediary hosts for human bilharzia. These have distinct morphological characters and probably represent the larval stage of some bilharzia-like parasite of small mammals or birds. Two of these species have been found by Leiper and Bahr in Egyptian snails.

On entering the skin these cercariæ cast their tails and bore their way through the tissue by means of papillæ on the oral sucker and possibly assisted by a chemical ferment. Not infrequently in man, as in experimentally infected monkeys, cercarial invasion is accompanied by intense skin irritation. The larvæ reach the portal system *viâ* the veins and possibly *viâ* the lymphatics as well and there develope in a period of from five weeks into adults of two sexes.

III.—Morphological Distinctions Between Adult Worms.

I propose to deal with the chief morphological distinctions of the two Egyptian species of *Bilharzia*, as *B. japonica*, having no tuberculated coat and laying a small, rounded and lateral knobbed egg, is easily separated.

The following are the main points:—

Males.—The male of *B. mansoni* is generally smaller in size and more grossly tuberculated than *B. hæmatobia*. The testes are smaller and eight or nine in number, whereas in the latter there are four or five larger ones.

Females.—The female of *B. mansoni* is smaller than that of *B. hæmatobia*, which measures 2 cm.. The ovary is situated in the anterior half, in front of the union of the intestinal caeca and the uterus and contains generally only one lateral-spined egg at a time. Occasionally, however, I have seen two, or even three, lateral-spined ova in the same female worms. In *B. hæmatobia* the ovary bears the same relationship to the intestinal caeca, but is situated in the posterior third of the worm and the uterus contains large numbers of terminal-spined ova.

IV.—Some Recent Points in the Clinical Appearances of Early Bilharziasis in Man.

From a clinical point of view bilharziasis, at least as it has manifested itself amongst soldiers, can be divided into two stages:—

(*a*) The toxæmic stage, occurring four to ten weeks after infection.

(*b*) A much later stage of localized disease, characterized in the case of *B. hæmatobia* by vesical and of *B. mansoni* by intestinal symptoms.

(*a*) The earliest symptoms associated with bilharziasis were first accurately described in *B. japonica* infections. Excellent descriptions of this disease have been given by Edgar in 1911 (17), Bassett-Smith in 1912 (18), Miyagawa in 1913 (19) and Laning in 1914 (20). Archibald (21) in 1914 described febrile symptoms in *B. mansoni* without eosinophilia and suggested it was due to a secondary infection. Previous to this Flu (22), in Surinam, called attention to the appearance of febrile symptoms resembling Katayama disease in patients with lateral-spined ova in their fæces.

In 1916 Lawton (23) described an outbreak of bilharziasis amongst Australian troops in Egypt. His cases presented some or all of the following symptoms: Abdominal pain, enlargement and tenderness of the liver and spleen, pyrexia, bronchitis, urticaria and diarrhœa. Eosinophilia was always present and the fæces contained the lateral-spined ova of *B. mansoni*. The onset was often insidious and the incubation period averaged four to eight weeks. The fever lasted from ten days to eight weeks. Emaciation was marked.

The analogy between this and *B. japonica* infections —the "Katayama disease" of Japan—was thus complete. In a series of 75 cases amongst Australian troops I have abundantly confirmed and amplified Lawton's original observations. That these toxæmic symptoms, however, are not necessarily dependent upon an infection with one species of bilharzia alone is evident from the fact that I have noted identical symptoms in pure *hæmatobia* infections from Serapeum,[3] as well as in double infections.

In fact, 34 out of 35 cases of the present series from Tel-el-Kebir (see footnote[3]) belonged to the latter category, that is to say that terminal- as well as lateral-spined ova were present in the urine and fæces.

In addition to this, ten out of thirteen of Lawton's original patients, who have since developed vesical symptoms in Australia, were found to be similarly affected.

The present series of cases may be classified according to the presence of outstanding clinical phenomena, as follows:—

(1) Those presenting symptoms of urticaria and prolonged pyrexia.

(2) Those with urticaria and pyrexia of less than ten days' duration.

(3) Cases with urticaria alone.

It is unnecessary in the present paper to amplify the clinical details, except to say that the urticaria is of the most intense type, causing a general œdema of the face and often of the penis and scrotum as well, with the formation of wheals on the trunk and limbs. It is sudden in appearance, remarkably transient and lasts on and off from one to ten days.

After disappearance of this stage a latent period supervenes, which may last anything from six weeks to 2½ years before obvious symptoms of localized bilharziasis are noted, though ova are being passed in the dejecta during the whole of that period.

(*b*) The localized symptoms can be classified according to the site of the lesion and the species of the parasite.

(1) This description of early vesical bilharziasis is compiled from 45 cases of pure *B. hæmatobia* infection.

The onset is most commonly ushered in by a burning and scalding urethral pain. In other cases the pain may be deep-seated, perineal or referred to the penis. This is followed by a terminal hæmaturia, the most characteristic feature of vesical bilharziasis. This hæmaturia may be a constant feature or may be of a most irregular nature. I wish to emphasize that pain is not a dominant feature of the disease. When it occurs it may be referred to the perineum, the urethra, the supra-pubic region or to the loins or small of the back. Suprapubic pain is especially marked during distension of the bladder and is the most common site of discomfort.

Frequency of micturition is generally met with at some stage of the disease, but is usually an early and

[3] As a notable confirmation of Leiper's work, the following points are remarkable. In the first instance the patients, who were stationed at those posts in 1916, were admitted to hospital with symptoms of bilharziasis, the nature of their infection being determined by the usual methods. Cases from Serapeum showed only *B. haematobia*, while cases from Tel-el-Kebir showed double infections. Following on this discovery the snail fauna of both these localities was investigated by Captain Bahr and myself, with the result that in the former the presence of *Bulinus* only could be substantiated, while at Tel-el-Kebir infected snails of both species were demonstrated. As a further proof it may be cited that monkeys were infected with bilharziasis with cercariæ derived from infected snails obtained from these localities. The chain of evidence was thus complete.

transient symptom, lasting four or five weeks. Urgency is a common complaint.

In these pure hæmatobia infections it is quite common to elicit a history of passage of blood and mucus *per rectum*, though this does not actually amount to a dysenteric attack.

On rectal examination localized tenderness above the prostate gland and in the region of the *vesiculæ seminales* is noted.

Cystoscopic examination shows congestion of the mucosa and frequently the presence of white, submucous nodules. The urine may yield macroscopic evidence of mucus and blood and a small amount of albumin may be present. The ova can best be demonstrated in the centrifugalized deposit of the urinary residuum and are associated with pus and red cells. A point of considerable importance is that these ova may be passed in a most vicarious manner and that therefore a single negative examination of the dejecta does not exclude the disease.

Contrary to what is stated in most text-books terminal-spined ova have been found in the fæces of most of these patients.

The examination of the blood shows certain constant changes. There is a moderate leucocytosis. In 35 cases the average count was 10,030; the lowest 4,700, the highest 22,000. The differential count in these cases demonstrates an average eosinophilia of 13.5%, with a relative decrease in the polymorpho-nuclear cells. The tendency is for eosinophilia to be most marked in the toxæmic stage (Lawton, 50%) and gradually to decrease during the subsequent two years to an average of 11%. The red cells and hæmoglobin show nothing of interest, except a slight secondary anæmia.

The ravages of late urinary bilharziasis resulting from the repeated infections to which the Egyptian fellaheen are constantly exposed, have not been observed in European troops during the war.

In the Egyptian, such complications as septic cystitis, hydro- and pyo-nephrosis, interstitial nephritis, urinary calculi, vesical carcinoma, urethral and perineal fistulæ are commonly observed. The comparatively high death rate (10%) amongst these unfortunate people is occasioned by three factors: mechanical obstruction by bilharzial granulation tissue, secondary septic infection and malignant supervention.

As Day (24) first pointed out, in these late cases the blood picture differs in certain respects. There is a relative and absolute increase in the polymorphic neutrophiles with a corresponding decrease in the eosinophile elements and the establishment of a severe secondary anæmia.

(2) This description of early intestinal bilharziasis is compiled from a study of 38 cases of *B. mansoni* infection. Most of these were complicated by concomitant *B. hæmatobia* infections. In the latter the vesical symptoms were identical with those already described. Thirty out of thirty-eight patients first reported sick on account of bladder trouble, not associated with any intestinal disturbance. Eleven of these, on cross-examination, denied all history of any intestinal trouble, although they were at the same time passing lateral-spined ova.

Even when present, intestinal symptoms were generally slight. These manifested themselves by a sense of rectal uneasiness, occasional attacks of diarrhœa, with blood and mucus in the stool, but rarely accompanied by tenesmus.

The dysenteric attacks lasted from two days to three weeks or more and were sometimes accompanied by emaciation. In the intervals between individual attacks the condition of the patient steadily improved, the only abnormality noted being the passage of solid stools, with abundant yellow mucus.

Microscopic examination of the mucus revealed the presence of lateral-spined ova and in four cases lateral-spined ova were present in the urine as well. The results of a systematically-conducted blood examination in no way differed from that already described for *B. hæmatobia*.

The late symptoms of the disease, as in the case of *B. hæmatobia*, were not observed in British troops at this comparatively early stage. In the Egyptian fellaheen, massive, pedunculated submucous tumours and subperitoneal infiltrations form in the colon; the former by sloughing may give rise to extensive intestinal ulceration. A coarse "pipe stem" periportal cirrhosis, first described by Symmers, is not very commonly observed at autopsy, but I believe that further investigation will prove that a finer grade of cirrhosis must exist in a large proportion of all *B. mansoni* infections.

It is hardly necessary here to point out that all these late pathological changes correspond with what is known to occur in *B. japonica* infections.

V.—Researches on the Pathological Basis of These Clinical Symptoms.

For a correct appreciation of the differences of the clinical picture of these two diseases, a careful study of the morphology and habits of the two species of trematodes is essential, as well as the morbid changes in the tissues of artificially infected monkeys.

Habitat.

The different distribution of the paired worms in the two species of infections is of considerable importance, as it explains the different anatomical situation of the pathological lesions.

In *B. mansoni* the habitat in infected monkeys was the inferior and superior mesenteric veins and the portal system of the liver. In *B. hæmatobia* infection, while paired worms were found in the portal, inferior and mesenteric veins, they were present in the largest numbers in the pelvic plexuses of veins, the vesical and the uterine. From here worms may wander into the inferior *vena cava* and may actually be filtered out in the lungs.

Though the adults of *B. mansoni* were never found in the latter situation, its lateral-spined ova were. On *a priori* grounds one would therefore expect the liver to be involved in monkeys by both species of bilharzia, but pulmonary lesions to be mainly limited to hæmatobia infections. This actually is what one finds at autopsy in experimentally infected monkeys.

The Mode of Deposition of Ova in the Tissues.

This theory was based on certain direct observations. The habits of the worms were studied in the

mesenteric veins of infected and anæsthetized monkeys on which laparotomy was performed. Fresh pieces of bowel were examined microscopically by fixing between glass slides apposed by rubber bands. In this fashion the deposition of ova in the vessels, in the various stages, as well as the actual mode of egress, were observed.

When the time for oviposition arrives the paired worms travel against the direction of the blood stream to the furthermost possible point. Here the female leaves the male partner and being of a much narrower calibre migrates until unable to progress owing to actual mechanical obstruction. The ova are then ejected, with their spines directed posteriorly through the vaginal opening, which is situated immediately behind the ventral sucker, into venules of a diameter approximating their own diameter. As the female withdraws her head the blood current tends to assume its normal course and thus forces the ovum onward, engaging its spine in the vessel wall. The blood now forces the ovum through the wall into the perivascular tissue. Hereafter its progression through the tissues is independent of the spine and is brought about by an active ulcerative process.

The Capacity of the Two Species for Producing Ova.

B. hæmatobia has a much greater capacity for ovum-production than has *B. mansoni*. This is probably due to its anatomical characters, for *B. hæmatobia* has, on account of the situation of the ovary, a much greater uterine capacity than has *B. mansoni*. I have actually counted as many as fifty terminal-spined ova in the uterus of one female worm, while in the female of *B. mansoni*, as a rule, only one ovum is found at a time. Occasionally, however, I have observed two or three ova in the same female worm. The latter fact may explain the greater severity of the localizing symptoms of *B. hæmatobia* infections as compared with those of *B. mansoni*.

Some explanation is obviously required, for in Egypt there exists a greater chance of infection by cercariæ of the latter species, which are much more frequently discovered in systematic snail dissection than are those of *B. hæmatobia*; in fact, on an average, they are eighteen times more common and, moreover, *Bullinus* snails are much scarcer than are *Planorbis*.

(To be Continued.)

JEANNE D'ARC AS A PATHOLOGICAL STUDY.

By **C. MacLaurin, M.B., M.S. (Edin.),**
Senior Surgeon, Royal Prince Alfred Hospital, Sydney.

Those of us who have been in France, have been deeply impressed by the passionate devotion of the French to Jeanne d'Arc, properly Jeanneton Darc, the most important, though not the greatest, woman who has ever lived, by whose work were established the foundations of modern western Europe. Let us turn aside for a moment from the glare and rush of daily life to study certain pathological conditions of the mind and body of this much-loved woman. Truly I cannot restore for you the indefinable fragrance of that old world, as of violets long since faded; nor can I recreate for you the romance which still hovers over the grave of those unhappy far-off things; yet I think I can interest you with the story of one whose ill-health, far from hampering her, indeed rendered her immortal.

So much of the story of Jeanne is so purely medical and is of a nature that cannot be discussed in ordinary books, that endless legends have grown up around her and innumerable books have been written, each vying with the other in absurdity, until the climax seems to have been reached in the ridiculous travesty of Mark Twain, who treats her and her compatriots as if they were modern Yankees. She has been written as a pious *religieuse*, as a wild-eyed warrior maid, as a weeping, self-pitying Victorian heroine and as everything else but what she was. With the utmost diffidence and reverence for her beloved memory I hope to describe for you what manner of woman she truly was, for it is better that we should know the truth than cherish the fables and nonsense we learnt about her at school. Very few doctors have taken the trouble to delve into these old stories and my own pious researches are the result of some weeks of enforced leisure.

The primary fact about Jeanne's life is that she never menstruated. We know that positively from the evidence at her trial of Le Sieur d'Aulon, her steward, who was chief of her household, both in the camp and at Court. He was a gallant, chivalrous gentleman, who held fast to Jeanne to the last, and even allowed himself to be wounded and taken prisoner with her rather than desert her. He must, in his position, have known exactly her menstrual character and he mentions various elderly serving maids who told him that she never became a woman.

D'Aulon is curiously borne out by a piece of evidence which has never yet, so far as I know, been properly understood. Jeanne had occasion to stay for a few days with the *Damiselle*[1] la Thoroulde, who, as in duty bound by the politeness of those times, took her to the bath. She must have needed it after weeks in the field. The *Damiselle* affirmed that to all appearances Jeanne was a virgin. History has laughed at the good lady, for how could anybody possibly pronounce on a woman's virginity simply from seeing her casually in a bath? Yet I think the *Damiselle* described strictly what she saw, but failed to understand it. I believe that her idea of a virgin's appearance was a woman with small breasts, boyish figure, and undeveloped hips and pelvis; and, indeed, such a figure fits very well with the known facts of Jeanne's life. I believe that the *Damiselle* was trying to tell us that Jeanne looked like an amenorrhœic.

It is curious that we have no description of Jeanne's appearance. All the stories of her beauty and charm are simply imaginary and were composed centuries after her death. We do know, however, that when she first met the dauphin she was of sturdy build; and we have a prophecy that France would be saved by a maid with thick-set shoulders, a gentle voice and a red birth-mark behind her right ear. As this propheey was probably written after Jeanne's victories, we may possibly take it as some indication of her bodily looks. She wore armour for days together and so she must have been strong, and she wore male dress to protect her among the rough mediæval soldiers.

[1] *Damiselle*, an old French term: the wife of a prosperous bourgeois; less high and mighty than a Dame.

But what protection would that have been if she had been of normal, feminine appearance? Worse than none. But if we consider her as an amenorrhœic, with the frame of a sturdy powerful lad, she would have been safe enough and would neither have been the first nor the last woman to ape the man in such circumstances. Another significant thing is that she was once officially examined to determine her sex.

When she was thirteen, instead of menstruating, she first heard the Voices, which were to lead her to her victories and to her death. It was at high noon of a summer's day, with the bees humming about her and the bells ringing in the church hard by, that she first heard a great Voice coming from a light on her right side that she recognized as the Voice of God. It said to her what one would expect it to say to a very simple child of thirteen, that she must be good and that God would aid her. A few days later, in similar circumstances, the Archangel Michael came to her. She recognized him by his picture and by his kindness and gentle voice. He was then of great fame, for St. Michael's Mount had just beaten off an attack by the English and everyone knew that that wonderful defence was owing to the Archangel's intervention on behalf of his beloved people. He told Jeanne that very soon St. Margaret and St. Catherine would come to see her, which in good sooth they did. Jeanne already knew them quite well, for she had constantly seen their pictures in the little church; and besides they were well-known to be the friends of poor maidens. Henceforth Jeanne was under the special protection of these heavenly creatures. At first her Council, as she came to call them, only appeared spasmodically—possibly, who knows? at times when normal pelvic activity should have been manifest—but eventually she could summon them at any time, especially during hours of quietness and when bells were ringing. That these delusions were real to her is as certain as anything could be, for she died for her belief; that they had no objective verity is also certain, for there is no real evidence that they ever told her anything she did not already know and the advice they gave her was often ruinous.

I do not know what variety of hysteria these beliefs represent; that is a matter for an alienist. I should think that the term "visionary" would not be far wrong. Curiously, one of the inquistors at her trial for witchcraft, long afterwards, seems to have come very near the truth. He got out of her that she had been fasting and had spent her whole time in church when she was not working and that the bells were ringing; and he asked suddenly: "Did not the sound of distant bells often resemble the human voice"? This kindly man—for Jeanne's trial was not by any means unfair by the light of those days—was probably endeavouring to give her a loop-hole of escape if she had the wit to see it; but by that time her Voices had become part of herself and she believed in them as she believed in her own body. Physiological abnormality, fierce religious fervour, starving frame, hum of bees, ringing of bells and a girl over-wrought and drowsy with a summer's day—surely these explain the Voices!

I must now enquire, with the deepest reverence, as to whether there was the slightest foundation for the English and Burgundian slanders against her virginity. Twice she was examined by a jury of matrons to settle that point; once before the dauphin would accept her services in his army and once again for the Inquisition before her trial. In both cases the matrons certified that Jeanne was intact. I do not know whether a jury of matrons could establish a fact that even nowadays we sometimes find difficult to decide; but there can be no doubt that, at any rate, they were impressed by Jeanne's evident purity of mind and the singleness of her purpose to save France; for her Voices had told her that she could only do so if she remained virgin.

Long years after Jeanne's death at the stake, it occurred to Charles VII., her Royal Master, who owed everything to her, yet who had deserted her with a baseness exceeding the baseness of princes, that since she had been certified a witch it must follow that he owed his kingdom to one of that hideous brood; and he straightway set about her re-habilitation and multitudes appeared to swear in her favour that the Inquisition might write itself down an ass. Among these were many of her old friends and companions in arms, such as the Bastard[2] of Orleans—now *le brave Dunois*—the aforesaid d'Aulon, the *duc* d'Alencon, and many others. Such men all avowed with one voice that for them the Maid had never had any carnal temptation; it is quaint to read the evidence of these respectable elderly gentlemen and to ascertain that among all the young women they had met in their hot and naughty youth, Jeanne was the only one whom they had neither desired nor solicited, for to them she was something apart, divine. It never occurred to them that the poor creature had never developed and was as free from the arts of temptation as was a child. There are stories of two men, one English and one Burgundian, who attempted familiarities, but Jeanne defended herself with such fury that no one ever tried again. Personally, in common with most men who have studied the subject, I believe Jeanne because she tells us so. There can be little doubt that what with her furious religious zeal and her want of development, she was as fiery in her virginity as is a worker-bee; and when we consider that to half of her world she was a most hideous witch and to the other half she was divine, it is impossible to doubt that she died intact.

Jeanne d'Arc was simple, true-hearted, and single-minded to the last degree. Yet she was no meek *religieuse*. She could give and take a rough jest like any man. There are several still extant, all rather grim, some bold—in anyone else we might say impertinent—yet in every case absolutely clean, a rare thing in both men and women of those times. There is much evidence to the fact that she was entirely ignorant. She set herself the task of ridding her army of prostitutes, who used to follow the soldiers in crowds; and to a large extent she succeeded. She used to run after them with a sword, chasing them personally out of the camp and on one occasion the

[2] Bastard of Orleans: the term means that the gentleman in question would have been the Duke of Orleans, but that he was born of the wrong mother. It was not his fault, poor fellow, and nobody thought any worse of him. Many bastards attained to considerable eminence, the Bastard of Bergundy, for example,

unhappy victim was slain by an accidental blow with the edge.

Generally she used the flat of the sword and at last the weapon broke in her hand, whereupon the King said to her very sensibly: "Why did you not use a stick, Jeanne? It would have answered quite as well?" *En passant*, I may say that this was the beginning of Jeanne's downfall. Naturally the soldiers were much annoyed over the whole business and when the famous sword of Fierbras, the sword of Charles Martel, the sword given her by St. Catherine herself, broke over the head of a common prostitute, the men began to question and to doubt.

To show the simplicity of her mind, we may recall the extraordinary number of threats she addressed to her enemies, even when she had no power over them. She even begins in her first famous letter to the English, in which she demands that, in God's Name, they shall destroy the fair land of France no longer, but shall return scatheless to their own country; and she finishes by saying: "If ye will have peace in the City of Orleans then make your answer; but, if not, remember that it will be to your great hurt and that shortly." It is a very splendid and noble letter, evidently paraphrased for her by some clever priest, for she could neither read nor write; still, it ends with a threat; and as things began to go badly with her and her King seemed treacherous and perhaps the poor girl was herself losing heart, she used threats and vain boastings more and more frequently. These latter letters were sent by an angry child.

How far did she help the French in a military fashion? That is not easy to say. At her rehabilitation trial her staunch old friends, d'Aulon and the Bastard, swore mightily that she was a great warrior and especially skilled in the placing of artillery; yet I fear that their memories or their loyalty had misled them, for when she was alive they used to arrange things without consulting, even without informing, Jeanne of their plans, but used simply to tell her of what they had decided. To which she would reply: "Attack the English in God's name; all will be well; do but attack." That she had infinite pluck there can be no manner of doubt. Once she was engaged no power could drag her out of the fray, unless her Voices ordered to withdraw. Yet at Patay, where the French won a really great victory, one of the few absolutely great and decisive victories of the world, the men-at-arms held her by main force in the rear out of harm's way, Jeanne storming and struggling to reach the firing-line. The truth seems to be that her influence was a purely moral one; she stirred up the exhausted French to fight; she changed the character of the war from the miserable predatory raids and half-legendary combats of Azincourt and Crecy to the real savage fighting whereby France won her nationhood. Her only strategy was "Attack in the Name of God!" her only tactics were the stout clouts and buffets dictated by her simple and loyal heart.

To sum up, Jeanne never became more than a child in mind or body. She never became more than a half-boyish hoyden, of a wonderful tenderness of heart and kindness of soul, driven forward by a fierce, religious zeal of which we can have no conception to-day. I have, for want of space, left out the innumerable stories—well attested in most cases—of her infinite pity and forgiveness towards her enemies; stories which are known to every Frenchman and to many Englishmen, and explain the universal love and sorrow which still brood over her name.

How utterly simple she was can best be understood by reading her conduct at her trial. The stories that her heavenly helpers put words into her mouth that confounded her enemies, are all false. Her simplicity was such that she threw away chance after chance of saving her life; and this makes the bare facts so intensely pathetic. Those who wish to hear of her victories and defeats, the black traitordom of her King, of the triumph won by the fifty ablest jurists of France over one child, whereby they caused her to retract no less than twice, brave fellows; and of her surpassingly cruel and barbarous death, must read them in the great and ironic pages of Anatole France. Do not trouble about the English historians, but read in one whose little finger is more than their loins, who has not indeed fully appreciated the pathological facts here set forth, but who has stripped the sham religiosity from Jeanne and has shown her so far as he knew as a true and living woman, with all her faults and virtues. There is a fairly good English translation of his book, which plods along beside the master as Jeanne's own great horse plodded beside her squire's palfrey; yet it is fascinating reading and frequently can be obtained at the second-hand book shops. New it will to-day be of great price.

The sad and terrible story of Jeanne d'Arc has impressed the human mind and has perhaps changed the face of history more than any event since Calvary. I have here ventured to set down a brief account of the pathological conditions under which her story became possible and it will pass an idle hour to muse upon what might have been the fate of the world had the little maid of Domrémy been normal more than five hundred years ago. However severely and scepticially we may look into her history, she yet remains the one pure and gracious figure, the one white angel, in the whole horrible story of war.

Reports of Cases.

TWO CASES OF EPIDIDYMO-ORCHITIS DUE TO THE BACILLUS COLI.

By **J. E. Piper, M.D.,**
Geelong, Victoria.

The first patient, who consulted me last August, was a wealthy bachelor, *æt.* 62 years, of very abstemious habits. He came complaining of pain in the left inguinal region and frequency of micturition. He had also noticed a colouration of the urine. The left cord was very tender, the veins swollen and the testis tender, but not enlarged. The urine contained a large number of red blood corpuscles, a few polymorpho-nuclear cells, some albumin and an abundance of *Bacilli coli.* Next day the testis was a little swollen and more painful. With rest in bed, a good purge, urinary antiseptics, exhibition of large quantities of fluid, fractional doses of calomel and the local application of heat, the condition subsided in a few days and so far there has been no recurrence

The second patient, whom I first saw last September, was also aged 62. He was a married man, doing manual labour. He became suddenly ill whilst working. On examination there was detected a distinct enlargement of the left testicle

and great tenderness of the testis, epididymis and cord. The urine was highly acid; it contained some albumin, fewer red blood corpuscles than in the first case, but more polymorpho-nuclear cells. There was as well an abundance of *Bacilli coli*. Treatment on the same lines as the first case was adopted, but the testis continued to increase in size. The patient became very febrile and was acutely ill. The pain was intense and the patient delirious at times. The testis became three times its normal size and the skin over it red and immobile. There was no enlargement or tenderness of the testis and epididymis on the right side. Then, on the fourth day, the pain and swelling started to subside. It was another seven days before the temperature reached normal and three weeks before the testis lost all swelling and tenderness. There has been no atrophy of the testis and the patient states that he has regained his previous sexual desire and sexual power. Recently the patient returned to me with a cystitis due to the *Bacillus coli*, which cleared up quickly on treatment.

I intend to make an autogenous vaccine for this case, this method of treatment having given me gratifying results in *Bacillus coli* infections.

These two cases illustrate an affection which has not received much recognition in works on diseases of the genito-urinary organs, and the only references I have been able to find in the journals are (1) an article by W. Gifford Nash, F.R.C.S., in the *British Medical Journal* of February 2, 1918, and (2) an article by Mr. W. P. Bonner in the *Lancet* of October 4, 1913.

Reviews.

PERCEPTION AND REPRODUCTION.

Professors Morat and Doyon have at last finished their *Traité de Physiologie*[1] with the fifth volume, published late last year. That a delay should have occurred in the appearance of this final instalment was inevitable and no one will refuse to receive kindly the authors' apology, which tells once more how France laid aside all other aims and considerations when she drew the sword for justice and humanity. With the exception of two very brief chapters on voice and on locomotion the book is divided into two approximately equal parts, one on the organs of perception, by Professor Morat, the other on reproduction, by Professor Doyon.

Professor Morat is a Frenchman and one finds that French names loom largely in his pages. So long as human nature is what it is, so long will the compiler emphasize the discoveries of his countrymen and so long will readers in other lands resent this. We do not mean that this fault is carried to any great length. It does not attain to anything like the degree discoverable in Italian works of science, where old-established laws and long-discovered structures are associated with picturesque names unfamiliar to the British reader. But when we find in Professor Morat's treatment of skin sensation that Head's analysis of the protopathic and epicritic elements is brought up only to be dismissed and that in a classification of receptors no mention is made of Sherrington's great generalization on the proprioceptive and other groups, we cannot but conclude, apart from national feeling, that an omission of importance has been made. There is also an old-world flavour about the description of the labyrinth and its function, which is imbedded in the chapter on the ear and is not quite adequately handled.

The treatment of the physiology of the ear and eye follows conventional lines. There is no new approach or revision, except that the distribution of emphasis is a little different from that existing in equally ambitious treatises in other languages. We have, however, one protest to make concerning the presentation of the physiology of the eye, but the feature challenged is not confined to this work; rather is it to be found in even greater prominence in other standard text-books. We certainly owe a huge debt to the genius of Helmholtz, but Helmholtz looked upon the mechanisms of the eye as a physicist and not as a pathologist or ophthalmologist. It was fortunate for science that he did approach the problems of the eye in that manner, but his very greatness has left a heritage of academic handling which still pervades the chapter on vision in each physiological treatise. The questions of special practical importance—intraocular pressure, the lens capsule, retinoscopy, the Argyll-Robertson pupil, oculo-motor paralyses, etc.—are either not mentioned at all or are referred to in a very few words. Professor Morat has not been able to break away from this tradition and the book suffers accordingly.

In these days, when stereo-radiology is so actively pursued, a short account of the principles and limits of stereoscopic vision might have been added, especially as French science has been active in this field. The part of the book on the ear is straight forward, and but little space is given to rival hypotheses of what are the cochlear receptors and how they act. Skin sensation is described with some detail, but the author is not so happy here as in other departments of his subject. As is usual, the physiology of the organs of perception is preluded by some general statements on the laws of sensation. We are glad to see the law so long coupled with the name of Müller, now very properly being described under the heading Descartes-Müller.

The second half of the book, by Professor Doyon, deals, as has been stated, with the physiology of reproduction. This is an admirable account, and can well claim to be the best presentation of the subject available to date. Reproduction is treated in a broad, comparative manner and the reader whose interests have hitherto been focussed upon human physiology, will glean one suggestive fact after another and find, therefore, sustained pleasure in the perusal. The author is scholarly and without bias. The fine work of the British school, especially that by Heape and Marshall, is given proper place and emphasis. One perhaps would have liked to see a chapter devoted to a short résumé of modern conceptions of heredity, but this is the only omission worthy of notice. The reproductive glands, as endocrine organs, receive excellent treatment.

There is an index to the whole volume, but it could be better. As might be expected in a work written by Frenchmen, the most perfect lucidity is everywhere manifest and the arrangement and style are all that we associate with the language and race. The authors are to be congratulated on bringing their laborious task to a conclusion.

[1] Traité de Physiologie, par J. P. Morat et Maurice Doyon; Fonctions de Relation, par J. P. Morat; Fonctions de Reproduction, par M. Doyon; avec 221 figures en noir et en couleurs; 1918. Paris: Masson et Cie; Royal 8vo., pp. 872. Price, 25 francs, plus 10% in Paris.

THE VICTORIAN FRIENDLY SOCIETIES.

At the annual conference of the Australian Natives' Association (Victorian Section) held at Horsham on March 18, 1919, and following days, the Board of Directors recommended the meeting to pass the following resolution, dealing with the dispute with the medical profession:—

> That the conference endorse the action of the Board in accepting the terms of settlement on the basis of the Wasley findings and the signed agreement, giving the Board full power to enter into any agreement in settlement and to amend rules or make new ones that might be necessary.

Mr. J. Lemmon, M.L.A., and Sir Alexander Peacock urged the acceptance of this proposal, on the ground that, since the Victorian Branch of the British Medical Association forbade any of its members from entering into contracts with branch societies as long as the dispute continued, a settlement was desirable. The Board of Directors wished to be in a position to make collective contracts when the settlement had been reached. There was some opposition to the proposal, and an amendment was moved to the effect that the proposal should be rejected and that a pool should be created to cover the cost of medical attendance to the members. This amendment was supported by 44 members, while 126 voted against it. The original motion was carried.

We understand that, while many orders are prepared to accept the agreement on the basis of the terms of the Wasley Commission, there are some that have not yet adopted this course. Whether they will remain obdurate or whether they will join the societies seeking for a satisfactory settlement it is impossible to foretell. It appears to us that they would be well advised to accept the position, as the terms are more generous than those which the friendly societies of New South Wales accepted some years ago.

The Medical Journal of Australia.

SATURDAY, MARCH 29, 1919.

It is with great regret that we have to announce the death of Professor Sir Edward Charles Stirling, which took place after a prolonged illness on March 20, 1919. His death creates a great loss, not only to the Medical School of the University of Adelaide, but also to the medical profession in Australia and to Australian medicine.

The Medical Profession in Australia.

There are indications abroad of radical changes in every walk of life, in every country, in every people. No one who is willing to use his eyes and ears, can doubt that old-time methods in social affairs, in politics and in national life are doomed. What the immediate and remote future has in store for the world is still wrapped in mist and hidden from view, but it is quite certain that the post-war problems will be solved by means different from those that have been employed in the endeavour to satisfy the demands of the various sections of the community in the past. The medical profession throughout the British Empire will be included in the re-organization of affairs and it would be sheer blindness for us to imagine that we could or should attempt to sail the same craft in the new order of things as sufficed for the smoother and less treacherous waters of pre-war times. It is better to face facts, to recognize the necessity of a ceaseless change and of an advantageous progression. It is wiser to mould our own destiny, or at all events to assist in moulding it, than to be swept along by the force of public opinion, an opinion usually not guided by logical argument or by sound technical advice. And in assuming the rôle of guiders of public opinion and of leaders in reforms associated with the health of nations, the medical profession should build its structure for the future on the only solid foundation, the rock of knowledge and of experience. During the war the medical profession had difficult tasks to perform, but the path that it had to tread was clear. Everyone had the duty of serving his country in some capacity and he who failed to perform this duty, will never have an opportunity of effacing his default. In the post-war problems, the way is not clear and the utmost care and forethought is needed in seeking it and, having selected the path, in following it consistently and steadfastly. In Australia perhaps more than elsewhere there is need for unanimity and concord. The medical profession will not only have to determine what its relations to the public are to be, but will have to modify or re-cast the provisions for the prevention of disease. Simultaneous with these changes, there must be some adjustment of the regulation of practice by the profession itself, and possibly the introduction of a more stringent ethical code to guide practitioners in their professional behaviour. The British Medical Association in Australia contains a large majority of the medical practitioners of Australia. Its interests in each part of the Commonwealth are the same: the aims and ideals of its members coincide.

A few years ago machinery was created for the purpose of co-ordinating the interests of the members in the several States. The Federal Committee has the duty of deliberating on those problems which do not have merely a local significance and of establishing a policy that shall be applicable in each Branch of the British Medical Association in Australia. It is unfortunate that the meeting of the Federal Committee convened for February 5, 1919, was of necessity cancelled, owing to the interstate quarantine arrangements. Some months will elapse before the next meeting can be held. This postponement of the consideration of the affairs of the medical profession by the one body representative of the profession throughout the Commonwealth may have the effect of throwing each Branch back on its own resources and of allowing the Federal aspect to be lost.

This *Journal* has been established for the purpose of assisting in knitting the medical profession throughout the Commonwealth more closely together. General Sir Neville Howse, V.C., Director-General Medical Services of the Australian Imperial Force, deliberately refused to recognize a distinction between his medical officers who came from the six different States of the Commonwealth. He followed the policy

of placing them together in the ambulances, casualty clearing stations and other units and did all he could to foster the spirit of the Australian citizen. This *Journal* has from its inception deliberately refrained from allotting in its pages distinct space to one or other Branch of the British Medical Association. The endeavour has been to address the member of the Association in Australia simultaneously and collectively and to co-ordinate their interests. It may be that the Federal spirit has not yet been awakened. It may be that the attempt still appears to be premature and illusory. It is, nevertheless, inevitable that as the medical profession in Australia is forced to recognize the necessity of common action for the public weal, this Federal spirit that Sir Neville Howse has succeeded in developing in his splendid staff of medical officers, will gradually gain in strength and earnestness until a general demand will be made for all action by the medical profession to be uniform throughout the Commonwealth. Until this has been achieved this *Journal* must continue to deal with the British Medical Association in Australia as a concrete whole, divided merely for convenience into local units endowed with autonomy and power of local action.

MEDICAL RE-EDUCATION.

The programme of the repatriation departments throughout the allied countries includes provision for vocational re-education. A wounded man who followed the occupation of a carpenter or agricultural labourer before enlistment, is offered training in his previous calling to enable him to compete as far as is humanly possible on equal terms with the uninjured man. The disability in his case is a physical one and the nation demands that every reasonable means shall be applied to remove it. The professional man does not suffer in the same way. War conditions may create a disability by rendering him unfit for a time or permanently to make strenuous mental effort, or a physical injury may limit the performance of some of the tasks he was previously able to carry out with skill. There is obviously no possibility of help to the professional man in these conditions. Time, freedom from financial embarrassment, congenial surroundings and congenial work are the remedies that must be applied to such a man, whether his calling be that of medical practitioner, lawyer, clergyman or any other mental worker. It is doubtful whether any definite plan of assistance can be usefully devised to help him. In the case of the medical man some aid in the form of a loan will probably represent the extent of assistance that is practicable. It is anticipated that the Medical Officers' Relief Fund will soon be in a position to undertake this task. There is, however, another class of medical practitioner who will need something more than financial aid. Many of our young graduates left the Commonwealth immediately after completing their medical course or within a few years of graduation. These young men have been employed in circumstances which necessarily have rendered them unprepared to enter general practice. Much of their knowledge of general medicine, gynæcology and surgery has been forgotten, since the opportunities to translate a theoretical acquaintance with science into a practical equipment has been lacking. It is quite obvious that these young men need medical re-training. We have already recorded the steps that have been taken in England, Scotland and Ireland to provide Australian medical students with facilities for continuing their professional studies during the period of waiting before demobilization. Within the Commonwealth many of the teaching and other hospitals have undertaken to find positions as resident medical officers for returned medical men in need of further tuition. This undoubtedly is a valuable suggestion and will be grasped eagerly by many men. The offer, however, does not cover the whole need. A full post-graduate course must be provided for these men, if they are to be placed in a satisfactory position as compared with their contemporaries who did not go at their country's bidding. In 1917 a beginning was made in the University of Melbourne; there could be set up an entirely satisfactory arrangement for returned men by the extension of the post-graduate classes then instituted. At the University of Sydney a post-graduate course was planned five years ago, but the proposal did not receive sufficient encouragement and was allowed to be stifled in its birth. The present time is opportune for a strenuous effort to plan a course which could be of real use both to returned young graduates and also to those practitioners who

recognize that nothing breeds inefficiency more surely or more rapidly than uncontrolled work. The course for the returned man must be thorough and need not be limited to the same extent as in the case of the established practitioner. The time should be divided judiciously between the more academic studies and the essentially practical work. Those who are responsible for the syllabus, should recognize that the object of the course should be to enable the practitioner to improve his power of diagnosis and to assess the significance of symptoms and physical signs in disease at their proper value. Similar courses should be instituted in Adelaide, and it is not an unreasonable proposal to establish courses in the other capital cities of Australia, even though they do not yet possess a medical school. The courses, wherever they may be held, should be free to all returned medical graduates.

MICRO-ORGANISMS OF THE BACILLARY DYSENTERY.

An attempt has been made by Captain E. G. D. Murray to classify the various bacilli associated with dysentery by means of a serological investigation. During the last few years a very large amount of research work has been carried out among the microbes found in connexion with bacillary dysentery in human subjects. The introduction of the fermentation test as a basis for grouping micro-organisms has led to the separation of a number of types which are considered by many to represent distinct species of organism. It is now becoming recognized that there is an increase in number of varieties of microbes of the dysentery group which is somewhat proportionate to the growing number of fermentable substances employed for differentiation.

The prevention of outbreaks of dysentery in the Expeditionary Forces has led the Vaccine Department of the Royal Army Medical College to undertake a study of the organisms concerned with dysentery in the hope that it might be possible to classify them into a small number of groups, the members of which might react together as antigen invoking the formation of antibody. The attempts to classify the organisms in the dysentery group on their reactions with certain "sugars" does not appear to be possible. The extreme variants in each group differ in such essential characters as Gram staining, motility and the presence of flagella. An attempt has been made to obtain a satisfactory classification with the aid of the agglutinating properties of the organisms.[1] Captain Murray succeeded in obtaining fifty-three strains of the dysentery bacilli, some from the Lister Institute, others from the Royal Army Medical College, others from the Central Research Institute at Kasauli, India, and still others from France, Egypt, Mesopotamia, Gallipoli and Salonica, isolated by bacteriologists of the Royal Army Medical Corps. These strains fell into four classes according to their reactions on glucose, lactose, mannite and dulcite, to their motility, to their action of litmus milk and to the production of indol. Class I. contains the various strains of the Shiga organisms which do not ferment mannite. The organisms of this group are distinguished from those of class II. by the production of indol, by acid agglutination (Michaelis) and by specific reactions to be discussed later. This group contains the organisms agreeing with the description of *Bacillus dysenteriæ* (Schmitz). Class III. contains the bacilli fermenting mannite and includes such well-known strains as "Flexner" and Y. Class IV. contains strains which were at one time included in class III., but were found to possess the power of fermenting lactose. They include organisms at one time considered to be typical "Flexner" and Y strains. The Y strain was the typical Y strain of the Lister Institute.

The study of the fifty-three strains was preceded by an investigation in regard to the technique of agglutination. The emulsions for agglutinating the antisera were all living, and the tests were carried out at 55° C. for 24 hours by the macroscopic method. The agglutinating sera were prepared from rabbits by giving them two intravenous inoculations of killed bacilli. The degree of agglutination was determined by "counting the plusses" in the results with suitable dilutions. In addition to the use of the agglutinating test in the ordinary manner with unabsorbed serum, full advantage was taken of the method of absorption devised by Castellani. In the first place the general results show that all the classes are generically related and that all should be called *Bacillus dysenteriæ*. The author bases his conclusion on the fact that he obtains agglutination at low titres. When he seeks for specific relations he uses a greater dilution and expects results with high titres. Class 1, which includes the typical Shiga-Kruse bacilli, forms a well-defined homogeneous species distinct from Classes II., III., and IV. The author states that preliminary experiments on the protection against lethal doses of dysentery bacilli afforded to rabbits by vaccines support this conclusion. Rabbits protected against bacilli of Groups II., III. and IV. show no resistance against lethal doses of Shiga-Kruse bacilli. Class II. is also a well defined and homogeneous species. It is identical with *B. dysenteriæ* (Schmitz) and with *B. ambiguus*. The serological results show that Class III. (Flexner and Y.) form a single species sharply differentiated from Classes I. and II., but more closely related to Class IV. There is no division of the members of this class into types, and the author concludes that such strains as "Flexner" and Y do not consist of different races of bacilli. The members of Class III. exhibit a complete range of intermediate reactions from full reactions to none at all with specific antiserum. Class IV. is composed of organisms belonging to the group "Kruse E." The author finds that the acid agglutination reaction of Michaelis is of no value for determining whether or not a given bacillus belongs to the dysentery group. He, however, finds that the power of forming indol is of value in distinguishing the members of Classes I. and II.

[1] *Journ. Roy. Army Med. Corps*, Vol. XXXI., pp. 257 and 353, October and November, 1918.

THE DETERMINATION OF SEX.

In the year 1900 Dr. E. Rumley Dawson endeavoured to persuade the Obstetrical Society of London that he had solved the mystery of the determination of sex, but he failed quite signally. He has since endeavoured to find support of his theory, but few biologists seem willing to accept his doctrines. Recently Dr. J. A. Parker wrote to this journal on the same subject and based his remarks on the same doctrine that Dr. Dawson had propounded. This theory consists in the assumption that one ovary yields ova destined to become male beings, while the other ovary is responsible for ova which may on fertilization become female beings. The theory also assumes that the ovaries ovulate alternately. A study of the evidence that Dr. Dawson has to offer led us to publish a review of his book a little more than a year ago, in which we expressed scepticism. Notwithstanding his claims that he is able to foretell the sex of an unborn child by calculations made on the basis of the number of menstrual periods since the birth of a previous child, it appeared to us that direct proof of an alternation of ovulation and of the appearance of the *corpus luteum* in the ovary corresponding, according to Dawson, to the sex of the child, was entirely wanting. We have now ample proof that Dawson's theory cannot be upheld. Dr. John G. Murray, Resident Obstetrician at the Johns Hopkins Hospital, has collected data at the request of Dr. J. Whitridge Williams, from which the points at issue can be determined.[1] During the 21½ years from September, 1896, to March, 1918, 17,500 deliveries took place at the Obstetric Clinic of the Hospital and from the records it was possible to ascertain the situation of the *corpus luteum* and the sex of the child born of 75 women. These records show that the *corpus luteum* was placed in the right and in the left ovary in 38 and 37 instances respectively. While the distribution was equal, there were 47 male and 28 female infants. A *corpus luteum* in the right ovary corresponded to 26 male and 12 female infants; a *corpus luteum* in the left ovary corresponded to 21 male and 16 female infants. In regard to the assumption of an alternation of ovulation on the two sides, the records enabled Dr. Murray to calculate the sex of the children according to the Dawson formula in 40 cases. The "estimated" sex proved correct in 20 and wrong in 20. Dr. Murray therefore concludes, and we may add with ample justification, that the supplying ovary has no influence upon the sex of the child; that the sex of an unborn child cannot be foretold and that the causation of sex is probably not due to any factor in the unfertilized ovum.

[1] *Bulletin of the Johns Hopkins Hospital*, December, 1918.

INTESTINAL ANASTOMOSIS.

The number of devices to ensure safety in the healing of intestinal wounds after repair may be regarded as evidence of the difficulty to be overcome. After the introduction of antiseptic surgery various methods of suture were proposed and applied and the surgeon was at pains to produce a clean peritoneal cavity. The fate of the patient depended at that time more on the chance that the peritoneum would be capable of dealing with a considerable amount of sepsis than on the accuracy of the closure of the intestinal wound. When asepsis replaced antisepsis, surgeons discovered that the peritoneum could be trusted to look after itself, provided that its delicate surface was not damaged by chemical or mechanical means. The cause of failure, especially after repair of the completely divided intestine, was found to lie in the line of suture. A quarter of a century ago Lembert's or Jobert's sutures were relied on, and little attention was given to the soiling due to contamination of the peritoneum through the track of the suture. Continuous suture had been discarded for interrupted suture, because it was recognized that a giving way of the suture involved a gaping of the wound with the former method. The next step toward the removal of the obvious dangers of anatomosis was the introduction of Murphy's button and the endeavour to prevent the inclusion of the mucous membrane in the suture. In more recent times many methods have been introduced into practice, all having for their object an accurate apposition of the several coats of the intestine and an avoidance of the possibility of leakage along the suture. Not long ago Halsted devised a procedure called the "bulk-head" suture. The ends of the divided intestine were invaginated by wooden mandrels carrying paper cones. After the invagination had been effected, the mandrels were removed on each side, the intestinal wall was burned through with the cautery knife at the points where it was incurved, so as to free the invaginated portions, and the paper cones apposed while the invaginated parts fitting on the cones were held in place. The last step in the procedure consisted in the application of sutures involving the serous and muscular coats. Halsted recognized that it was impossible to avoid in all cases the inclusion of the mucous membrane and the consequent entry by the suture into the lumen of the gut. He claimed for this method a distinct advantage over those means which necessitated the removal of an underlying instrument before the suture was completed. E. G. Grey has now modified the procedure to some extent and has studied the process of repair in a series of experimental sutures in animals.[1] Instead of using paper cones, he has substituted fibrin blocks. The fibrin is obtained from blood gathered at the abattoir and is first of all well washed and then ground into a fine pulp. The pulp is made into sheets of any desired thickness by drying in a press. The blocks cut from the dried sheet are capable of being sterilized by steam without any loss of firmness. The fibrin is gradually digested in the intestinal tract. The second modification of Halsted's method consists in the employment of a wire release ligature. Heavy silk ligatures are interlocked over the end of a piece of fine wire. When the ligatures are drawn taut, the wire keeps them in place. The ligature can be released by gently rotating the wire until the loops of the ligature are disengaged. From the microscopical pictures of the anastomoses prepared at periods up to 106 days after the suture it appears that the cautery does not cause any evident delay in repair. The chief

[1] *Bulletin of the Johns Hopkins Hospital*, December, 1918.

cause of slow healing proved to be an inequality in the size of the inturned portion of the intestinal wall. When the length of the inturn is greater on one side than on the other, there may be faulty approximation with a resulting failure in healing, or the necrosis may be more extensive and more rapid on the one side than on the other. When the healing takes place, these faults leave no inherent disadvantage in the intestine. On the other hand, when the stitches puncture the epithelium there is delay in the repair. A prolongation of the epithelium usually extends into the deeper layers and the result may be a weakening of the union of the wall. It would appear, nevertheless, that under the conditions of the experiment anastomosis of the divided intestine by means of the fibrin bolus and the wire-releasing ligature yield a result which is practically ideal from the anatomical point of view. It remains to be seen whether the technique can be adapted to surgical practice, and especially whether the faults to which Dr. Grey calls attention can be avoided in human subjects.

Naval and Military.

CASUALTIES.

The 461st list of casualties, which was issued to the public on March 18, 1919, indicates that the three following medical officers were ill at the time the list was compiled: Captain Eric Meikle, Captain Geoffrey Brutus Packham and Captain Frederick Albert Bouvier.

APPOINTMENTS.

The following notices concerning appointments, promotions, etc., have been culled from the *Commonwealth of Australia Gazette*, No. 37, of March 20, 1919:—

Australian Imperial Force.

Second Military District.

Major (temporary Lieutenant-Colonel) D. M. Embelton, Australian Army Medical Corps, relinquished the temporary rank of Lieutenant-Colonel. Dated 19th December, 1918.

Major J. A. James, Australian Army Medical Corps, from 12th Field Ambulance, to command 4th Field Ambulance, and to be temporary Lieutenant-Colonel whilst so employed. Dated 7th December, 1918.

Third Military District.

Captain H. S. Jacobs, from 2nd Field Ambulance, Australian Army Medical Corps, to be Officer Commanding 2nd Australian Sanitary Section, *vice* Captain M. J. Holmes, D.S.O., to England. Dated 16th December, 1918.

Major H. B. Lee, D.S.O., M.C., Australian Army Medical Corps. (This officer's initials should be as now shown and not as in Executive Minute No. 170/19, promulgated in *Commonwealth of Australia Gazette*, No. 28, dated 27th February, 1919.) (See *The Medical Journal of Australia*, March 8, 1919, page 200.)

Fourth Military District.

Captain (temporary Major) M. L. Scott, Australian Army Medical Corps, relinquished the temporary rank of Major on ceasing to hold the appointment of Surgical Specialist, 1st Australian General Hospital. Dated 3rd December, 1918.

Major J. R. Muirhead, from 6th Field Ambulance, Australian Army Medical Corps, to command 5th Field Ambulance, and to be temporary Lieutenant-Colonel whilst so employed, *vice* Lieutenant-Colonel W. E. L. H. Crowther, to Australia. Dated 13th December, 1918.

Fifth Military District.

Lieutenant-Colonel R. S. McGregor, D.S.O. (now commanding 4th Field Ambulance), to be Assistant Director Medical Services, 4th Australian Division, and to be temporary Colonel whilst so employed. Dated 7th December, 1918.

To be Majors—

Captain ((Honorary Major) N. M. A. Alexander. Dated 25th February, 1919.

Honorary Captain S. M. Ware. Dated 5th March, 1919.

To be Captain—

Walter Ramsay Beavis. Dated 27th December, 1918.

APPOINTMENTS TERMINATED.

First Military District.

Major W. R. Kelly. Dated 22nd February, 1919. (This amends the reference to this officer which appeared in Executive Minute No. 103/4, 1919, promulgated on page 175 of *Commonwealth of Australia Gazette*, No. 18, dated 6th February, 1919.

Second Military District.

Lieutenant-Colonel J. Reiach. Dated 4th April, 1919.
Lieutenant-Colonel W. E. Kay, D.S.O. Dated 15th April, 1919.
Major W. M. A. Fletcher. Dated 25th February, 1919.
Major A. S. D. Barton, D.S.O. Dated 1st March, 1919.
Major C. J. Tozer, D.S.O. Dated 5th April, 1919.
Captain E. E. Pittman. Dated 15th February, 1919.
Captain J. E. Streeter. Dated 17th February, 1919.

Third Military District.

Major H. P. Brownell. Dated 5th February, 1919.
Major H. A. Hagen. Dated 26th February, 1919.
Captain A. W. Connolly. Dated 9th February, 1919.

Fifth Military District.

Captain A. Badock. Dated 22nd March, 1919.

Australian Military Forces.

Second Military District.

Australian Army Medical Corps—

Captain (temporary Major) N. W. Kater relinquishes the temporary appointment of Adjutant and temporary rank of Major, 23rd February, 1919, and to be transferred to the Australian Army Medical Corps Reserve with the honorary rank of Major. Dated 24th February, 1919.

Australian Army Medical Corps Reserve—

Honorary Captain G. C. Harper to be Adjutant, Australian Army Medical Corps, temporarily, and to be granted the temporary rank and pay of Major whilst holding such appointment. Dated 24th February, 1919.

Walter MacDonnell Kelly to be Honorary Captain Dated 13th February, 1919.

Third Military District.

Australian Army Medical Corps Reserve—

Robert Dillon Lemon to be Honorary Captain. Dated 20th November, 1915.

Athol Stanley Mortimer Tymms to be Honorary Captain. Dated 16th February, 1919.

Fourth Military District.

Australian Army Medical Corps—

Captain (provisionally and temporary) W. Hamilton to be transferred to the Australian Army Medical Corps Reserve, and to be Honorary Captain. Dated 4th February, 1919.

Australian Army Medical Corps Reserve—

The date of appointment of Honorary Major A. A. Lendon, which appeared in Executive Minute No. 20, promulgated on page 30 of *Commonwealth of Australia Gazette*, No. 3, dated 9th January, 1919, is amended to read 2nd August, 1918.

We regret to announce the death of Dr. George Bowen Thomas, which took place at Ashfield, Sydney, on March 24, 1919. Dr. Thomas was taken ill with influenza and died of a complicating pneumonia.

Abstracts from Current Medical Literature.

ORTHOPÆDIC SURGERY.

(107) Treatment of Disabilities of the Upper Extremity.

Until the patient has recovered volitional control in the hand plastic surgery is contra-indicated (Naughton Dunn, *Brit. Journ. Surg.*, October, 1918). When stiffness is present the patient is given a few weeks and the result determines the next move. If improvement is marked and adhesions tend to snap under treatment, forcible manipulations under anæsthesia will hasten recovery. If the peri-articular structures becomes œdematous and tender, or if there is limitation of flexion due to shortening of the extensor tendons, gradual flexion is advised. In cases of ankylosis, with a moderate degree of movement of one or more joints, treatment should be by pseudo-arthrosis. Pronation and fixed flexion of the wrist are treated by gradual correction or by forced correction under anæsthesia, when there is no response to massage and hydrotherapy. Ischæmic paralysis is treated similarly and after full correction is obtained a moulded plaster splint is applied and worn for some months. The splint is removed daily for electrical treatment of the extensor muscles. In open operations on the wrist a distinction is made in treatment, according to the condition of the radio-ulnar joint. If this be unaffected, care should be taken to open on the radial side only; if the radio-ulnar joint be involved, fixation in a position midway between pronation and supination is most desirable. In non-union of the radius and ulna bone grafting and bone shortening are advocated. Preliminary excision of the scar is desirable in bone grafting and the graft is retained in position by cutting it a little wider than its bed and by wedging it into place. In acute conditions of the elbow fixation in flexion and supination is indicated, while the shoulder is fixed at 70° abduction, combined with slight flexion. When nerves are divided the author uses muscle transplantation in all cases where direct suture is impracticable.

(108) The Effect of Faulty Skeletal Alignment upon the Eyes.

The possibility of eye conditions influencing posture has previously been suggested, but C. L. Lowman (*Amer. Journ. Orthop. Surg.*, December, 1918) has found no reference to the opposite fact that spinal deviation or mal-alignment may be the cause of deviation of the eyes or of pathological changes in ocular structure. He used to attribute the improvement in symptoms, such as occipital headaches, neuralgia and pains in the neck, to the general improvement in the postural defects, which were treated by proper corseting, shoeing and active exercise. In collaboration with an ophthalmic surgeon, Dr. Lloyd Mills, it was noticed that some of the cases that the author was treating presented almost identical symptoms with a type of patient frequently referred to Dr. Mills for examination and treatment. Dr. Mills made muscle measurements on the author's patients who had presented themselves for orthopædic treatment. He found abnormally strong divergence present in three-fourths of these, while the proportion in ordinary ophthalmic practice was about one in thirty. It is reasonable to suppose that changes in the eye condition are due to changes in the head position in compensatory cervical curves. It is suggested that the changes are brought about through the sympathetic system and by the effect on the labyrinthine mechanism, which co-ordinates the eye movements with the position of the body. The relationship between the cervical sympathetic system and the eye is dealt with at length and the suggestion is made that cervical irritation from anatomical faults or pathological processes may lead to changes in the nervous state of the eyes. Sherrington is quoted in support of the argument to show that "the labyrinthine receptor is in touch with all the segments of the body and these in a measure may be regarded as appended to the otic segment." In the actual examination of 50 patients about 80% showed marked muscular inbalance. For this reason the author thinks all cases of deformity should have special eye examinations. Mills thinks that it is even conceivable that a great many cases of astigmatism may be finally demonstrated to be compensatory curvatures of the cornea. As the eye matures at six years of age, the importance to eye balance of postural corrections made before that age is evident.

(109) Lesions of the Sacro-Iliac Joint.

Robert B. Cofield (*Amer. Journ. Orthop. Surg.*, November, 1918) points out that the sacro-iliac joint has all the characteristics of a true joint, and should therefore be subject to the same diseases as other joints. It probably bears more weight than any other joint in the body. Nature meets this by providing strong posterior ligaments and muscles. The author leaves out of discussion the ordinary, well-defined affections, and deals with "subluxation" or "relaxations." These may be acute or chronic. In the acute type pain and stiffness of the muscles of the back and thigh follows upon some injury. There is difficulty in changing attitudes, and the patient is unable to bend forwards or laterally without discomfort, while the muscles of the back and of the back of the thigh become spasmodically contracted during movement. The treatment of the acute condition consists in rest, with a support for the lumbar spines and strapping of the pelvic bones together. If this is neglected a chronic lesion ensues, the lumbar curve becomes obliterated and a list of the body to one side developes from a spasm of the lumbar muscles. Atrophy of the buttocks and thigh muscles may occur. The treatment is to anæsthetize the patient and forcibly to flex the straightened lower limb until the hamstrings are heard to give way. This procedure also stretches the lumbar muscles, while adhesions of the sacro-iliac joint are broken. Plaster of Paris is then applied from the axilla to just above the trochanters of the femora; the patient is kept in bed for a few days, and in ten days' time a webbing belt is substituted for the plaster. In no case was the author able to demonstrate subluxation radiographically. He believes the lesions are none other than acute and chronic sprains of the sacro-iliac joints. Pain is due to tearing of the posterior ligament and prolonged effort of the posterior musculature in guarding against movement. The lesions are to be distinguished from arthritis of infectious origin, *e.g.*, tuberculosis, syphilis and disorders of the lumbo-sacral articulation. The results of treatment have been satisfactory, but a guarded prognosis should be given in neurotic patients.

(110) Luxation of the Sacro-Iliac Joint.

Edward T. Wentworth (*Amer. Journ. Orthop. Surg.*, November, 1918) reports two cases of demonstrable luxation of the sacro-iliac joint. In one the lesion followed laparotomy three years previously. In the other a fall from a horse was the exciting cause. Both patients were able to walk, but have pain in the region of the joint. Kernig's sign was present in one. Painful movement in the joints was demonstrated in the following manner: The patient faced away from the examiner, whose hands were placed with the fingers along the crests of the iliac bones and the thumbs on the sacro-iliac joints. The patient raised each lower limb alternately, and as the knee passed above the horizontal position a sharp click was heard, and movement was felt under the thumb of the examiner.

(111) Peripheral Nerve Injuries.

It is a fundamental principle of nerve surgery that all operations should be done in a sterile field. This means that secondary suture is the rule. Byron Stookey (*Surg., Gynec. and Obstet.*, October, 1918) says that no surgical treatment should be undertaken as long as there are progressive signs of regeneration. These signs are defined as formication, which is the most important; shrinkage of the areas of anæsthesia; return of deep sensibility; return of muscle tone and muscle sensibility. No surgical operation should be undertaken without electrical study both before and during the operation. A dry field is important, and the author advises the avoidance of the tourniquet. He uses Kocher's blood platelet preparation or adrenalin. Hæmorrhage from the nerve ends should be controlled by gentle and prolonged digital pressure. It is a good practice to save the scar tissue between the divided ends to be used when traction is necessary. Damage to the nerve tissue and rotation of the axis can thus be avoided. For large gaps nerve grafting is the operation of choice. Excision of bone is never justifiable; some plastic procedure can usually be done to give better results.

MORPHOLOGY.

(112) The Relation of Iodine to the Thyroid.

In the *Journal of Experimental Zoology*, Vol. 27, No. 3, January 5, 1919, W. W. Swingle presents two papers embodying the results of his observations and experiments on the relation of iodine to the thyroid gland. In the first paper he deals with the effects of feeding iodine to normal and thyroidectomized tadpoles, whilst the second paper deals with the comparison of the thyroid glands of iodine-fed and normal frog larvæ. It was noticed that unless the iodine was mixed with the food in some way the larvæ refused to eat it. The most effective way of rendering the iodine palatable was to mix it with wheat flour (1 to 100) and feed the dry mixture. Finely ground iodine crystals, iodoform and potassium iodide were all used in this way. It was found that potassium iodide feeding definitely stimulates growth and the differentiation of the limbs, although with other iodine compounds growth ceases. Iodine and iodoform give results identical with those obtained when extract of thyroid gland is used as food; changes of hyperthyroidism appear a few days after administration of the substance and any overfeeding produces death from a too rapid rate of metabolism. As regards thyroidectomized tadpoles which ordinarily fail to metamorphose, but permanently retain their larval characters, it was noticed that they are stimulated to a complete metamorphosis in an abnormally short time by iodine feeding. Thus it would appear that iodine acts within the organism as a hormone and that the gland functionates chiefly for storage purposes, having extracted any contained iodine from the blood. As regards the effect of iodine feeding on the thyroid gland, it was demonstrated that the glands of iodine-fed larvæ were approximately of equal size with those of the controls, despite the fact that the iodine-fed animals were only half the size of the controls, so that they must have relatively much larger glands. Microscopically the glands of the iodine-fed animals were seen to be full of colloid, whereas the controls showed only a scanty amount. As a corollary to these studies it is suggested that amphibian metamorphosis is a result of the interaction of environmental agencies such as iodine and its compounds, with the hereditary factors controlling the growth processes.

(113) The Wax Glands of the Cockroach

E. S. Dusham has enquired into the structure of the body wall of the cockroach with particular reference to the hypodermic cells and their functions. The results are presented in the *Journal of Morphology*, Vol 31, No. 3, December 20, 1918. He states that the body wall of the cockroach does not differ materially from that of other insects, being composed of a cuticula, a hypodermis consisting of a single layer of cells and of a basement membrane. However, many of the hypodermal cells have become specialized, increasing in size, so that in places they present the appearance of two or more layers. The cytoplasm of the cells has become strongly granular, while the nuclei have become larger and vesicular. This structure indicates that they have become secretory in function and are gland cells. Their secretion passes to the exterior through very minute pores through the chitin. This secretion appears to be waxy in nature rather than an oil, and spreads in a fine film over the cuticula. It seems to serve as a protection against moisture and has a typical odour. The fact that this odour remains in places which have been infested for a considerable time after the cockroaches have been driven away, and that it is difficult to remove it from dishes and kitchen utensils, may be accounted for by the wax remaining adherent to the old tracks of the insects.

(114) Nerve Endings of Sensory Type in Stomach and Intestine.

A variety of visceral sensations are attributed to impulses originating in the muscular coats of hollow organs. These are believed to be due to the stimulation of sensory nerve endings lying in the layer of involuntary muscle and not in the mucosa or submucosa. F. W. Carpenter in the *Journal of Comparative Neurology* (Vol. 29, No. 5, October 15, 1918) presents a preliminary note discussing this subject, and outlining the initial stages of an investigation of the varieties of nerve endings in the muscle of the stomach and intestine of the cat and dog. He has found terminal structures in the form of skeins and nets, composed of fine fibrils in the longitudinal muscle coat of the cat's stomach. These endings are connected with unmyelinated varicose nerve fibres. Tufts of exceedingly delicate fibrils occur in the muscle coat of the dog's intestine and also in the subperitoneal tissue. These connect with fine non-medullated nerve fibres of smaller calibre than the motor fibres supplying the muscle. Structurally, these endings conform to the sensory rather than the motor type of nerve endings. Their presence in the muscular coat alone is consistent with the results of recent physiological experimentation on the sensibility of the alimentary canal.

(115) Vital Staining.

In the *Anatomical Record* (Vol. 15, No. 5) E. L. Clark and E. R. Clark study the reaction of certain cells in the tadpole's tail toward vital dyes. The tadpoles used for the experiments were chiefly larvæ of *Rana pipiens*. As a result of their observations they find that Fischel's statement that only the basis dyes are taken up by living tissue, is contradicted by the striking results obtained by staining, *in vivo* with pyrrhol blue, trypan blue and other acid benzidine dyes. The lipoid theory of vital staining, brought forward by Overton, is also shown to be inadequate as a general explanation, in view of the action of this same class of dyes which are insoluble in lipoids. And the assertion of many authors that diffuse staining and nuclear staining are always evidence of the death of the cell so stained, or at least of injury to it, has been shown to be untrue in the case of gentian violet, which Russel demonstrated to be capable of acting as both a diffuse protoplasmic and a nuclear stain. The lymphatics of the tadpole's tail were observed to possess a marked phagocytic power, by the manner in which lymphatic sprouts grew toward red blood cells, extruded into the tissues, sent out processes towards them and actively took them in.

(116) The Lmyphatics of the Omentum.

Norton R. Casparis throws new light on the lymphatics of the omentum, *Anatomical Record* (Vol. 15, No. 2). As the result of his experiments, he concludes definitely that lymphatics are present in the omentum and furnish a channel for absorption from the peritoneal cavity. Whether the lymphatics really play a very active rôle in this respect, he is not prepared to say; for, while absorption was very meagre in his experiments (in which the omentum was immersed in carmine solution), it might be considerably more pronounced when the omentum is closed up in the peritoneal cavity, where pressure conditions are necessarily different, or the meagre absorption might have been due to the small number of lymphatics present. The experiments also show that drainage from the omental lymphatics is into the *cysterni chyli* and on through the thoracic duct, and not by way of the posterior mediastinal glands, as hypothecated by Crouse in his extensive paper on the great omentum.

(117) The Western Newt, a Natural Enemy of Mosquitos.

A. C. Chandler, writing in the *Bulletin of the Oregon Agricultural College*, shows by observation and experiment that the salamander (*Notophthalmus torosus*) is a highly efficient destroyer of the larvæ of mosquitos (*Review of Applied Entomology*, Vol VI., Ser B., p. 10, October, 1918). For this purpose its employment is recommended for the following reasons. (1) Its freedom from natural enemies. (2) Its ability to live in almost any kind of water that is not too filthy, and in almost any kind of receptacle, from a glass bowl to a lake. (3) Its relatively enormous capacity for food, combined with the ability to go for long periods without it. The chief objection to its use is that it breeds and developes slowly. It has been shown that reservoirs, mill ponds, garden pools and large sluggish irrigation ditches can be kept free of mosquitos by this means. The similarity between *N. torosus* and other varieties of *Notophthalmus* points to them all being equally useful as destroyers of mosquito larvæ.

British Medical Association News.

MEDICO-POLITICAL.

A meeting of the Queensland Branch was held at the B.M.A. Rooms, Adelaide Street, Brisbane, on March 7, 1919, Dr. Andrew Stewart, the Vice-President, in the chair.

Dr. C. A. Thelander gave notice that he would move at the next meeting:—

(*i.*) That this meeting point out to the Government that the present system of appointments to the honorary staff at the General Hospital is unsatisfactory and in the interests of all concerned urgently demands alteration.

(*ii.*) That this meeting represent to the Government the urgent desirability of all such appointments being made on the recommendation of an advisory board, comprised of representatives of the Queensland Branch of the British Medical Association and of the Queensland University.

As a result of the discussion on Dr. Hawkes' paper on some aspects of orthopædic work, it was resolved that a letter be sent to the Defence Department, to the effect that the Queensland Branch held the opinion that a better system of orthopædic treatment should be adopted in the military hospitals in the State.

The following have been elected members of the New South Wales Branch:—

Dudley de la Force Henry, Esq., M.B., Ch.M. (1918, Univ. Sydney), 64 Kensington Road, Summer Hill.

Arthur Roy Hunt, Esq., M.B., Ch.M. (1918, Univ. Sydney), No. 4 Australian General Hospital, Randwick.

John Wesley Hart, Esq. (M.B., Ch.M., 1890; M.D., Univ. Edin., 1918), Sutherland.

Henry Lawrence Tonkin, Esq., M.B. (1918, Univ. Sydney), 49 Womerah Avenue, Darlinghurst.

Frederic Lindsay Macqueen, M.B. (1917, Univ. Sydney), "Bokhara," Cremorne Road, Cremorne.

PNEUMONIC INFLUENZA.

The Minister for Trade and Customs has published a proclamation in the *Commonwealth of Australia Gazette*, No. 35, of March 13, 1919, repealing the proclamation of February 5, 1919, declaring the State of South Australia a Quarantine Area, being infected with pneumonic influenza.

The Government of New South Wales has appointed a commission to study the ætiology and treatment of pandemic influenza. The appointment was announced on March 21, 1919. The members of the Commission are Professor D. A. Welsh, Dr. A. E. Mills and Dr. H. Ritchie.

Public Health.

NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the fortnight ending March 15, 1919:—

	Metropolitan Combined District. Cs.	Dths.	Hunter River Combined District. Cs.	Dths.	Rest of State. Cs.	Dths.	Total. Cs.	Dths.
Enteric Fever	26	1	10	2	40	2	76	5
Scarlatina	15	0	1	0	40	0	56	0
Diphtheria	35	1	12	0	79	1	126	2
*Pul. Tuberculosis	45	14	12	0	0	0	57	14
Malaria	1	0	0	0	0	0	1	0
P'monic Influenza	135	5	29	1	48	0	212	6

* Notifiable only in the Metropolitan and Hunter River Districts, and, since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the fortnight ending March 16, 1919:

	Metropolitan. Cs.	Dths.	Rest of State. Cs.	Dths.	Total Cs.	Dths.
Enteric Fever	2	0	27	2	29	2
Scarlatina	22	0	18	0	40	0
Diphtheria	75	6	61	1	136	7
Pulmonary Tuberculosis	47	18	13	4	60	22
C'bro-Spinal Meningitis	0	0	1	0	1	0
Influenza	—	—	—	—	1646	117

QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the fortnight ending March 15, 1919.—

Diseases.	No. of Cases.
Enteric Fever	40
Scarlatina	9
Diphtheria	82
Pulmonary Tuberculosis	18
Erysipelas	2
Poliomyelitis	2
Pneumonia	25

SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, during the fortnight ending March 8, 1919:—

	Adelaide. Cs.	Dths.	Rest of State. Cs.	Dths.	Total. Cs.	Dths.
Enteric Fever	0	0	9	1	9	1
Scarlatina	5	0	37	0	42	0
Diphtheria	3	2	38	0	41	2
Pulmonary Tuberculosis	3	3	12	4	15	7
Erysipelas	0	0	3	0	3	0
Morbilli	2	0	26	0	28	0
Pertussis	0	0	23	0	23	0
Influenza	2	0	12	1	14	1
Meningitis	0	0	1	0	1	0
Puerperal Fever	0	1	0	0	0	1

TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, during the fortnight ending March 8, 1919:—

Diseases.	Hobart. Cases.	Launceston. Cases.	Country. Cases.	Whole State. Cases.
Enteric Fever	0	1	9	10
Scarlatina	0	1	0	1
Diphtheria	0	11	23	34
Pulmonary Tuberculosis	3	0	7	10

WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the three weeks ending March 8, 1919:—

	Metropolitan. Cases.	Rest of State. Cases.	Totals. Cases.
Enteric Fever	20	9	29
Scarlatina	13	14	27
Diphtheria	40	15	55
Pulmonary Tuberculosis	16	11	27
Poliomyelitis	0	1	1
Septicæmia	0	1	1
Malaria	7	3	10
Beri-Beri	0	3	3
Dengue Fever	0	5	5
Erysipelas	1	0	1

Obituary.

ARTHUR HOLROYD O'HARA WOOD.

On October 4, 1918, while leading a Flying Patrol over St. Quentin, in France, Arthur Holroyd O'Hara Wood, a Major in the British Royal Air Force, met with his death. The record of his life given briefly below, is a very extraordinary one. He was born on January 10, 1890. He went to school first at the Camloden School and later, in 1905, at the Melbourne Grammar School. At the age of fourteen he passed his matriculation examination in eight subjects. While at the Melbourne Grammar School he won the Government prize for science and in 1908 he was *Dux* of the school, together with Henry Cecil Colville, now a practitioner of medicine. In the same year he divided honours again with Colville as *proxime accessit* in the Exhibition in Chemistry and Physics at the Senior Public Examination. He also attained First Class Honours. His brilliancy as a scholar was equalled by his brilliancy on the sports ground. He was wicket keeper in the first eleven, he was a member of the football team and of the rifle team and was captain of the school tennis team. He won for his school the Raynes-Dickson Shield for the Schoolboy Tennis Championship of Victoria. In 1905 he was unbeaten at boxing in his division and in 1908 he was Boxing Champion of his school.

In 1909 he entered the University to study medicine. On joining Trinity College he gained the Perry Scholarship. At the end of the year he passed his first year examination with Second Class Honours in biology and in chemistry. He did not enter for honours in 1910, 1911 or 1912, because he was devoting a considerable amount of time to University and College sports. Although he was satisfied to take a pass at the second, third and fourth yearly examinations, his ambition led him to higher things in his fifth year examination, when he won second class honours in surgery, including clinical surgery and also in obstetrics and gynæcology. In 1914 he won the prize for forensic medicine.

In 1910 at the Victorian Rifle Club Jubilee meeting he took 26th place in the final 100 for the King's Prize. Later he won his triple blue at the University for cricket, tennis and rifle shooting. His tennis record was remarkable. He was in succession:—

Champion of his School.
Champion schoolboy of his State.
Champion of his College.
Champion of his University.
Champion of his State.
Champion of New South Wales.
Champion of Australasia.

In 1912 he won with his brother the Doubles Championship at Tennis at Grace Park and repeated this performance in 1913. In 1915 at his final public appearance he secured three Autumn Championships, singles, doubles with his brother and mixed doubles with Miss Waxman.

He was an excellent field shot, a good horseman, a first class swimmer and, had he not chosen medicine as a calling, would probably have made a name as a black and white artist.

In 1914 he left Trinity College and entered the Alfred Hospital as one of the six junior resident surgeons, after having taken his degrees in medicine and surgery. He remained at the Alfred Hospital until June, 1915. In March he became Acting Superintendent.

Early in the war he became convined of the illimitable possibilities of aviation. He was satisfied that if he succeeded at it, he would be of greater service to the allied cause in the capacity of a flying man than in that of a medical officer. The work in the air has fully justified his early conviction. On July 19, 1915, he left Victoria as Ship's Surgeon on the *Demosthenes* and arrived in London on September 17. On October 14 he entered the Brooklands Flying School as a pupil and was gazetted in December. He went to France on February 10, 1916, with a squadron, holding the rank of Second Lieutenant. From that time until December 20, 1916, save for two or three short periods of furlough in England, he was continually flying over the lines, observing, bombing or fighting. A few months after his arrival in France he was promoted to the rank of Captain and Flight Commander. He was affectionately known to the flying world in France as "Anzac" or "Old Anzac." At that time a pilot's life was reckoned in weeks. Notwithstanding the enormous dangers to which he was exposed, he remained unscathed during this period. On December 21, 1916, he was recalled to England and was recommended for his majority.

Shortly before this the Commonwealth authorities had requested the War Office to select someone to re-organize and bring up to date the Aviation School at Point Cook. Arthur Holroyd O'Hara Wood was selected for this important task and was on the point of sailing, when the Commonwealth authorities abandoned the scheme. He was kept in England, ear-marked for Australia, lest this decision should be reversed. During the months that followed he was sent from school to school to instruct the pupils and to try the new and improved machines. Without cessation he importuned the authorities to send him back to France, but without avail. He thus lost sight of his old squadron and the recommendation for his majority was buried out of sight.

In December, 1917, he was ordered to lead an Australian

"Flight" from Birmingham to France and to remain in charge until the Australian Flight Commander had gained the necessary experience. He remained in charge for two months. This "flight" did excellent work and was specially thanked by the General Officer Commanding. He was recalled to England at the end of the time and was again employed in instruction. Aviation had made huge strides and his work was the training of super-pilots. This continued until July, 1918, when he was gazetted Major.

On July 22, 1918, he was in charge of a squadron of fast flying scout (fighting) machines in France. These machines did good and effective work. His furlough was due in about a fortnight, when the end came. He was killed on October 4, 1918, and his body was recovered on the 6th. He was buried between eight and nine o'clock that evening by lantern light, his brother and two friends being present at the graveside.

His success in the "great game" no more affected his innate modesty than did his many victories in the world of sport. The qualities which gained for him popularity and distinction at home, won for him at the other side of the world the esteem, admiration and affection of his men, his brother officers and his leaders. Those who are qualified to judge, have stated that he was absolutely fearless and, though conscientiously careful of the lives of others, he was one of the cleverest, most capable and most courageous pilots this war has produced. It might be held that a man of his calibre should not have been allowed to have risked an unusually valuable life in the most dangerous of all the dangerous branches of a modern fighting army. No power on earth, however, would have restrained him from doing what he conceived was his duty. Few men during the course of a long life have achieved as much as he did during his twenty-eight brief years.

NEGLECTED CHILDREN IN VICTORIA.

The Secretary and Inspector of the Department for Neglected Children and Reformatory Schools in Victoria published his report for the year 1917 some months ago. The report contains a considerable amount of important information and reveals the need of more accurate investigations into the mental characters of many of the neglected and delinquent children. The Department carries out its work in conformity with the provisions of the *Neglected Children's Act, 1916*, the *Crimes Act, 1915*, and the *Infant Life Protection Act, 1915*. The total number of children under supervision by the Department on the last day of 1916 was 10,780. In the course of the year this number had increased by 363. No less than 1,793 children were admitted as neglected children and 97 other children were admitted to the Reformatory School. Of the total number of admissions, namely, 1,890, 20 were of returned absconders. Five children were transferred from gaol, one was transferred by the Lunacy Department and there was also an interchange of 24 children from the Reformatory Department to the Neglected Children's Department and 28 from the Neglected Children's Department to the Reformatory Department. It is therefore clear that 82 of the children were actually under the supervision of the Department before the beginning of the year. The charges in respect of which the children were admitted under the *Neglected Children's Act* were being possessed of no means in 1,556 instances out of a total of 1,753 and requiring protection under the various sections of the *Infant Life Protection Act* in 141 cases. Actual offences were relatively rare. There were 26 instances of larceny, nine of housebreaking and stealing, two of wilful damage to property and one each of insulting behaviour, throwing a missile, imposition and idle and disorderly, unlawful assault on a girl and wilfully setting fire to a haystack. Eight children were transferred from other benevolent institutions, while protection was required in the remaining six on account of the fact that four of them were dwelling with a prostitute and two of them were dwelling with a drunkard. There were 1,161 of these neglected children who had been left with their mothers, the father being dead in 610 cases, the father being an invalid in 271, the father having deserted the mother in 170, the father being in gaol in 62, the father being in a lunatic asylum in 38, the father being in a hospital in 5 and interned in 3 and the mother being divorced in two instances. In a detailed table further information concerning the character of the parents is given. From this table it is apparent that in over 10% of all cases the children were handicapped by the fact that one or both parents were drunkards, were in gaol, were of bad character, were immoral, were in lunatic asylums or were mentally weak. No doubt other stigmata were present, although they have not been tabulated. It requires but little imagination to assert that a not inconsiderable percentage of these children were deficient in their mental development and were in need of special expert handling, in order to reduce the damaging effect which they were likely to have on the community in general and to ameliorate their unfortunate condition.

It appears that the number of neglected children visited each year has increased more or less regularly from 1904, when it was 382, to 1915 when it reached the alarming total of 2,285. In 1916 the number was reduced to 1,821 and in 1917, as stated above, it was still further reduced to 1,753.

It is difficult from the report to ascertain much concerning the fate of these children. During the year 109 died. A further 228 were discharged by effluxion of time. The Act gives the Department power to retain the children under supervision until they reach the age of 20. At this time, no matter how urgent may be the need for further control, the child has to be handed back to those who have neglected it or to the tender mercies of the hard world, to sink or swim, according to chance. It is true, however, that a certain number find succour in those homes in which they have served during the period of supervision. In addition to the children mentioned above, there were 1,014 who were discharged by order of the Governor in Council. The significance of this procedure is dealt with below. Seven of the children were transferred to the Lunacy Department and 38 to the Reformatory.

Of those who remained under supervision, 5,151 were boarded out with their mothers. It is pointed out that when a mother is in necessitous circumstances, it is necessary for her to have her children committed as neglected children in order to receive relief. Thus, approximately one-half of the so-called neglected children were neglected only in a legal sense. The number boarded out with foster mothers was 3,979. The foster mothers are carefully selected and their homes are subjected to inspection. It is stated that the necessity to remove a child on account of the neglect, inattention or other unsuitable attributes of the foster mothers is rare. The amount paid for the maintenance of children over two years of age is 6s. a week. It appears, however, that the increased cost of living has been severely felt by the mothers and foster mothers, who have in many cases found it impossible after providing food to clothe the children and to keep their outfits up to the standard required by the regulations. Notwithstanding the admission of this hardship, no additional money has been paid. It is pointed out that an increase of 1s. a week would involve an annual expenditure of an additional £20,000.

The Department succeeded in placing 532 of their chargelings in service, either as farm hands or as domestic servants. The children who are placed in service are over 14 years of age. They are encouraged to take advantage of the facilities afforded at the technical and secondary schools to become proficient at some specialized calling. It is stated that the majority of the children have done well and that some of them have done brilliantly. The total number attending the high schools was 19 and of those attending the technical schools 14.

In the next place, 848 children were placed with their relatives or others on probation without cost to the State. It appears that the Department does not sanction this course when the home surroundings are unsatisfactory. It is stated in the report that "the interest of the child and not the desire of an over-indulgent or foolish parent should be the chief consideration in determining the desirability or otherwise of releasing him on probation. Experience has proved that where this principle has not been followed, children placed on probation usually become uncontrollable and relapse into crime, just at the most critical time of their lives." It appears that experience has taught those in authority that there is an innate tendency to crime in a number of these children and

that this tendency increases as the child approaches adolescence. Extended experience would teach them that "the most critical time" of their lives is extended from puberty to old age. The following sentence, which reads "constant supervision of children on probation is absolutely necessary to secure successful results" should be amended by the substitution of the word individuals for the word children. Of the remainder of the children, we find 30 in hospitals, 10 on visits to friends and two in gaol, while 16 are missing.

The Reformatory Department handles a smaller number of children. The year was started with 195 under supervision. There were 49 court committals, 43 children transferred from gaol or from the Neglected Children's Department and five returned absconders. The number was thus increased by 97. On the other side of the account there are 115 technical discharges. These include 66 children discharged by effluxion of time, 28 transferred to the Neglected Children's Department, 18 unreturned absconders, five discharged by order of the Governor in Council, one death and one child transferred to the Lunacy Department. Of the balance of 177 children, 120 were maintained in institutions, 27 were placed in service homes, 26 were handed to the care of relatives or others without cost to the State and four were committed to gaol.

A series of short paragraphs are included in the report, dealing with the institutions and private reformatories to which the children were sent. From these paragraphs it appears that satisfaction exists in regard to the suitability of the institutions for this purpose.

The total number of children dealt with under the *Infant Life Protection Act* was 971; of these, 566 were boarded out on the first day of the year and 405 were boarded out during the course of the year. It appears that 140 became wards of the State, 26 died, 149 were taken charge of by their parents, 32 were adopted, 29 on reaching the age of five could no longer be dealt with under the Act and 585 remained under supervision. The majority of the children were placed in homes singly. In 75 instances two children were placed in one home, in 20 three children were taken, while in seven and three the number of children handed over was four and five respectively. It is stated that nearly all these children were illegitimate.

It appears that the Act contains no provision authorizing the Department to arrange for the adoption of children. The foster parents consequently have no legal basis to support the guardianship and it is stated that this defect militates against the adoption of many children into good homes. On the other hand, the Department has strong reasons for believing that, under the cloak of adoption, trafficking in infants is indulged in. The Secretary expresses the view that it would be better if all the adoptions could be legalized and if the Department could exercise supervision over the adopted children.

The Medical Officer issues his report from the Boys' and Girls' Receiving Depôt. Dr. Sheahan writes that the infants on admission were usually pallid and shrunken. He recognized that many of them would have lived, if they could have been breast-fed. Notifications concerning a venereal infection were received in respect of 25 to 30 infants under the *Venereal Diseases Act*, which came into force during the year. Dr. Sheahan found that these children, who were treated in the homes of their foster parents, thrived better than those who were unavoidably detained at the Depôts. He states that the general health of the children remained good during the year in the majority of instances, although isolated cases of scarlet fever, diphtheria and morbilli occurred.

In one short paragraph Dr. Sheahan puts forward views which are the most important of any contained in the whole report. The paragraph reads as follows:—

> There came under my notice a number of children below the average in mental efficiency, who will not be able to compete with their fellow-men later on in the stress of life. These mental defectives have not sufficient will-control and may develope abnormal instincts. They should be under the guidance of a skilled psychiatrist, who would observe their criminal or moral tendencies, and, if necessary, they should be kept under the control of the State for the rest of their lives and thus prevent the propagation of their species.

UNIVERSITY OF SYDNEY MEDICAL SOCIETY.

We have been requested to announce that the annual meeting of the University of Sydney Medical Society will be held in the Union Hall of the University on March 31, 1919, at 1.30 p.m.. The business of the meeting will include the presentation of the annual report and balance sheet, a consideration of proposals for the revision of the constitution of the Society and the election of ofice-bearers for the ensuing year.

Correspondence.

THE PROPHYLAXIS OF VENEREAL DISEASE.

Sir,—I read with much interest the leader on "The Prophylaxis of Venereal Disease." I believe I was the first to start the prophylactic treatment of venereal disease in the A.I.F. in Australia.

In March, 1915, when I formed the Fifth Field Ambulance, a prophylactic tent was established for the unit. During the three months' training in Queen's Park, Waverley, we had only one case of venereal disease and that was due to negligence of instructions.

Faithfully yours,

REUTER E. ROTH, Col.

Formerly D.D.M.S., 1st and 2nd A.N.Z.A.C.

No. 4 A.G. Hospital, Randwick,
March 24, 1919.

THE TREATMENT OF RETURNED MEN.

Sir,—I have recently returned home after serving with the A.I.F. abroad. Before leaving I made a verbal agreement with a colleague to work my practice.

A few days after resuming work I was asked by several patients when I would take their cases over, as it was expected that they would be transferred at once. Others told me that the following question was asked when my locum was first called in: "Is this for me or for Dr. X?" This question would naturally place anyone in a rather awkward position.

(1) Will you kindly state the usual procedure in handing over, as several cases were not mentioned by my colleague, but by my old patients?

(2) Is the question mentioned a fair one and ethically correct?

Yours, etc.,

March 24, 1919. "X."

[(*i.*) In 1914 the members of the several Branches of the British Medical Association in Australia pledged themselves to safeguard the interests of their colleagues who were serving the Empire. It was recognized that some difficulty might be experienced in special cases in handing back patients to a returned man. To meet this difficulty and to render it quite clear what the duty was of a colleague who had undertaken to look after the practice of a medical practitioner while he was on active service, it was resolved in the majority of the Branches that all practicable means should be taken to induce patients to return to their old medical attendant. We have indicated on many occasions that the practitioner acting on behalf of a medical officer on active service should refuse to continue in attendance on any of the latter's patients after his return to practice. There is no doubt that the proper and honourable course for the *locum tenens* to pursue is to retire from the attendance on all his colleague's patients as soon as the latter is prepared to resume practice. It is usual for the *locum tenens* to hand over a proportion of the fees earned from the patients of his absent colleague.

(*ii.*) This question is not quite clear. If the colleague is in practice in the same town or district he is certainly entitled to look after new patients who apply to him personally. On the other hand, he should ascertain of every new patient whether he had been under the care of Dr. X. The question "Is this for me or for Dr. X?" appears to us to be highly improper. The colleague's duty would have been to have enquired whether a new patient had previously been

under Dr. X's care and, if this proved to be the case, the patient's name should be entered in separate books dealing with Dr. X's practice.]

Proceedings of the Australian Medical Boards.

TASMANIA.

The undermentioned gentleman has been registered by the Medical Council of Tasmania, appointed under the provisions of *The Medical Act, 1908*, as a legally qualified medical practitioner:—

Edmund Alfred Elliott, Esq., M.B., Ch.M. (Univ. Sydney, 1918), Hobart.

Medical Appointments.

The appointment of Dr. C. A. F. Clark (B.M.A.) as Government Medical Officer at Manilla, New South Wales, is announced in the *New South Wales Government Gazette* of March 21, 1919.

It is announced that Dr. G. J. Campbell (B.M.A.) has been appointed Medical Officer of Health for the Claremont Road Board, Western Australia.

Under the provisions of the *Workers' Compensation Act, 1915*, Dr. Balcombe Quick (B.M.A.) has been appointed Certifying Medical Practitioner and Medical Referee at Melbourne.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xiii.

Department of Public Instruction, New South Wales: Four Medical Officers (two male and two female).

Department of Public Health, Queensland: Microbiologist and Pathologist; also Health Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges, Institutes, Medical Dispensaries and other Contract Practice. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Cloncurry Hospital.
TASMANIA. (Hon. Sec., Macquarie Street, Hobart.)	Medical Officers in all State-aided Hospitals in Tasmania.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec. 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United Friendly Societies' Dispensary. Canterbury United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Friendly Society Lodges at Lithgow. Friendly Society Lodges at Parramatta, Auburn and Lidcombe. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. New South Wales Ambulance and Transport Brigade. Newcastle Collieries—Killingworth, Seaham Nos. 1 and 2, West Wallsend. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

Apr. 1.—N.S.W. Branch, B.M.A., Council (Election of Officers and appointment of Standing Committees).
Apr. 1.—Tas. Branch, B.M.A., Council and Branch.
Apr. 2.—Vic. Branch, B.M.A.
Apr. 4.—Q. Branch, B.M.A.
Apr. 8.—N.S.W. Branch, B.M.A., Council (Quarterly).
Apr. 10.—Vic. Branch, B.M.A., Council.
Apr. 11.—Q. Branch, B.M.A., Council.
Apr. 11.—S. Aust. Branch, B.M.A., Council.
Apr. 11.—N.S.W. Branch, B.M.A., Clinical.
Apr. 15.—Tas. Branch, B.M.A., Council.
Apr. 15.—N.S.W. Branch, B.M.A., Ethics Committee; Executive and Finance Committee.
Apr. 16.—W. Aust. Branch, B.M.A., Council and Branch.
Apr. 16.—North-Eastern Suburbs Med. Assoc. (N.S.W.) Annual; Eastern Suburbs Med. Assoc. (N.S.W.).
Apr. 17.—City Med. Assoc. (Sydney, N.S.W.).
Apr. 22.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney.